IS THE AMERICAN WAY OF LIFE ENVIRONMENTALLY SUSTAINABLE?
By David Herndon

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First Unitarian Church
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Suppose that you had one million dollars. Would you be economically secure?

It all depends on your consumption habits. Suppose that last year you had one million two hundred and fifty thousand dollars. The year before that, you had one million five hundred thousand dollars. Three years ago, you had one million seven hundred and fifty thousand dollars. And four years ago, you had two million dollars. Each year, your consumption habits reduce your financial resources by two hundred and fifty thousand dollars. Thus, even though you may have one million dollars now, in four years you will have nothing, given your consumption habits.

In his book The Last Hours of Ancient Sunlight, Thom Hartmann suggests that this imaginary example illustrates the world's actual situation. Hartmann notes that since 1859, when the world's first oil well was drilled not far from Pittsburgh, in Titusville, Pennsylvania, human beings have extracted and consumed 742 billion barrels of oil. The oil industry estimates current world oil reserves to be 1,000 billion barrels. Should we feel secure with regard to this energy supply? It depends on our consumption habits. At current rates of consumption, we will use all the earth's oil in about forty years. Forty years from now, even according to the most optimistic projections from the oil industry, the earth's oil will be all gone, given current rates of consumption.

Thom Hartmann places this rather chilling prospect into a comprehensive historical context. Human beings appeared about two hundred thousand years ago. Throughout most of that time, the number of human beings was limited by how much food from wild sources could be obtained by gathering and hunting. The number of human beings throughout the entire world probably never exceeded five million. About forty thousand years ago, human beings learned how to domesticate several different grazing animals—goats, sheep, and cows. Now human beings could convert more sunlight into food. About ten thousand years ago, human beings learned how to plant crops. With agriculture, human beings could convert even more sunlight energy into food. About eight thousand years ago, human beings learned how to work with metal, and they began to use metal farming tools. With this technological advance, human beings could convert still more sunlight energy into food. Increased amounts of food supported dramatic population increases. By two thousand years ago, the population of human beings had grown to about two hundred and fifty million.

Thom Hartmann points out that even with domestication of animals, agriculture, and the use of metal tools, human beings were still using only about one year's worth of sunlight energy per year. This changed, however, about nine hundred years ago when human beings discovered how to burn coal. Now, human beings could use not only current sunlight energy, but also sunlight energy that had come to the earth hundreds of millions of years ago and had been stored in the form of coal. Human beings could now use much more than one year's worth of sunlight energy per year. Thom Hartmann writes: "This represents a critical moment in human history, for this is when our ancestors started living off our planet's sunlight-savings. . . . The planet's human population grew beyond the level that the Earth could sustain if humans were only using local 'current sunlight' as an energy and food source."[1]

Largely because more energy was available, the number of human beings throughout the world increased from about five hundred million in the year 1000 to about one billion in the year 1800. The energy provided by oil made additional population increases possible. By 1930, the world population of human beings was two billion. By 1960, the world population of human beings was three billion. By 1974, as yet more energy from ancient sunlight became available in the form of oil, the world population of human beings was four billion. By 1987, the world population of human beings was five billion. And by 1999, the world population of human beings was six billion.

Given that these population increases have been possible because we have learned to use ancient sunlight stored in the form of oil to produce increased amounts of food, what might we expect forty years from now when the oil is gone?

In his book Collapse: How Societies Choose to Fail or Succeed, Jared Diamond traces the history of several cultures for which archaeological investigations provide evidence of general social collapse. Diamond begins with Easter Island, a remote Pacific island well-known for its large stone statues. Radiocarbon dating suggests that East Island was settled around the year 900. Estimates of the maximum population of this island of only sixty-six square miles range from 6,000 to 30,000 people. Around the year 1680, with the deforestation of the entire island and the exhaustion of other natural resources, the ruling elite were overthrown, and an extended time of civil war occurred. Before Captain Cook's visit in 1774, the population had declined by approximately seventy percent. Diamond writes that "the collapse of Easter society followed swiftly upon the society's reaching its peak of population, monument construction, and environmental impact."[2]

Diamond traces a similar collapse on three other Pacific islands, Mangareva, Pitcairn, and Henderson, which were settled around the year 800. He summarizes the story in this way: "Many centuries ago, immigrants came to a fertile land blessed with apparently inexhaustible natural resources. While the land lacked a few raw materials useful for industry, those materials were readily obtained by overseas trade with poorer lands that happened to have deposits of them. For a time, all the lands prospered, and their populations multiplied. But the population of the rich land eventually multiplied

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[1] Thom Hartmann, The Last Hours of Ancient Sunlight: Waking Up to Personal and Global Transformatnion (New York: Three Rivers Press, 1999), p. 15.

[2] Jared Diamond, Collapse: How Societies Choose to Fail or Succeed (New York: Penguin Books, 2005), p. 110.

beyond the numbers that even its abundant resources could support. As its forests were felled and its soils eroded, its agricultural productivity was no longer sufficient to generate export surpluses, build ships, or even to nourish its own population. With that decline of trade, shortages of the imported raw materials developed. Civil war spread, as established political institutions were overthrown by a kaleidoscopically changing succession of local military leaders. The starving populace of the rich land survived by turning to cannibalism. Their former overseas trading partners met an even worse fate: deprived of the imports on which they had depended, they in turn ravaged their own environments until no one was left alive."[3]

Diamond moves on to trace the collapse of the Anasazi people at Chaco Canyon and Mesa Verde in what is now the southwestern part of the United States. In fact, several different societies went into steep decline from 1130 through the 1400s. He writes: "The Anasazi collapse and other southwestern collapses offer us not only a gripping story but also an instructive one . . . , illustrating well our themes of human environmental impact and climate change intersecting, environmental and population problems spilling over into warfare, the strengths but also the dangers of complex non-self-sufficient societies dependent on imports and exports, and societies collapsing swiftly after attaining peak population numbers and power."[4]

Next, Diamond traces the collapse of Mayan civilization in present-day Mexico, Guatemala, and Honduras. "To summarize the Maya collapse," Diamond writes, "we can tentatively identify five strands. . . . [first,] population growth outstripping available resources. . . [second,] the effects of deforestation and hillside erosion . . . [third,] increased fighting, as more and more people fought over fewer resources . . . [fourth,] climate change . . . As our fifth strand, we have to wonder why the kings and nobles failed to recognize and solve these seemingly obvious problems undermining their society. Their attention was evidently focused on their short-term concerns of enriching themselves, waging wars, erecting monuments, competing with each other, and extracting enough food from the peasants to support all those activities. Like most leaders throughout human history, the Maya kings and nobles did not heed long-term problems . . ."[5]

The last social collapse that Diamond traces took place in two medieval Norse settlements on Greenland, which were established around the year 1000 and flourished into the mid-1400s. Reasons for the collapse of these settlements include climate change, unwillingness to change core values to adapt to changed circumstances, unwillingness to learn from the indigenous Inuit people, and what Diamond calls "a conflict between the short-term interests of those in power, and the long-term interests of the society as a whole."[6]

The obvious question presents itself to anyone who learns about the collapses of these societies, all of which enjoyed success for hundreds of years. Is our own society also headed for collapse, or can we learn from the mistakes of these other societies?

A few moments ago, we heard that at present rates of consumption, the world's current oil reserves will be gone in about forty years. But that is not the only troubling

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[3] Ibid., p. 120.
[4] Ibid., p. 137.
[5] Ibid., p. 177.
[6] Ibid., p. 276.

illustration of current problems. Jared Diamond writes: "Soils of farmlands used for growing crops are being carried away by water and wind erosion at rates between 10 and 40 times the rates of soil formation, and between 500 and 10,000 times soil erosion rates on forested land. Because those soil erosion rates are so much higher than soil formation rates, that means a net loss of soil. For instance, about half of the topsoil of Iowa, the state whose agricultural productivity is among the highest in the U.S., has been eroded in the last 150 years."[7] Thom Hartmann notes that "72 acres of rainforest are destroyed every minute, mostly by impoverished people who are cutting and burning the forest to create agricultural or pasturelands to grow beef for export to the United States. This 38 million-acres-per-year loss will wipe out the entire world's rainforest in our children's lifetimes if it continues at its current pace."[8] Richard Leakey estimates that the background or natural rate of species loss is one every four years. Nowadays, however, according to Thom Hartmann, "we are losing species at a rate of 17,000 to 100,000 a year . . ."[9] Indeed, says Hartmann, "the earth has lost nearly one-quarter of all species of plant and animal life that were present when [human beings] first appeared."[10] Responding to those who would claim that these losses do not matter, Jared Diamond offers this comment: "Elimination of lots of lousy little species regularly causes big harmful consequences for humans, just as does randomly knocking out many of the lousy little rivets holding together an airplane."[11] Thom Hartmann reports: "Pesticide use in the United States is up over three thousand percent since World War II . . . But while the insects—who can evolve through hundreds or millions of generations during the period of a single human generation—are becoming immune to our pesticides, we are not. This leaves us vulnerable to the poisons we, ourselves, manufactured to kill off other species. . . . Ninety-nine percent of all U.S. mother's milk today contains detectable traces of DDT."[12]

For me, one of the most troubling prospects for the future of our increasingly globalized human community is the huge difference in rates of resource consumption between First World and Third World countries. Jared Diamond puts it this way: "On the average, each citizen of the U.S., western Europe, and Japan consumes 32 times more resources such as fossil fuels, and puts out 32 times more wastes, than do inhabitants of the Third World."[13] Thom Hartmann says it in a slightly different way: "The northern hemisphere countries (North America, Europe, Northern Asia) contain only 25% of the world's population, but they consume over 70% of the world's total energy stores, eat more than 60% of its food, and consume over 85% of its wood."[14]

Jared Diamond offers this set of sober reflections: "[N]o one in First World governments is willing to acknowledge . . . the unsustainability of a world in which the Third World's large population were to reach and maintain current First World living

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[7] Ibid., p. 489.
[8] Hartmann, p. 50.
[9] Ibid., p. 59.
[10] Ibid.
[11] Diamond, p. 489.
[12] Hartmann, pp. 60-61.
[13] Diamond, p. 495.
[14] Hartmann, p. 60.

standards. . . . Even if the human populations of the Third World did not exist, it would be impossible for the First World alone to maintain its present course, because it is not in a steady state but is depleting its own resources as well as those imported from the Third World. . . . At present, it is untenable politically for First World leaders to propose to their own citizens that they lower their living standards, as measured by resource consumption and waste production rates. What will happen when it finally dawns on all those people in the Third World that current First World standards are unreachable for them, and that the First World refuses to abandon those standards for itself?"[15]

What happened in Rwanda may offer some clue to what might happen. Jared Diamond devotes a chapter of his book to a discussion of the genocide that took place there in 1994 between the Tutsis and the Hutus. One might understand this genocide, during which 11% of the population perished, as the result of an inter-ethnic conflict exacerbated by colonialism. In fact, resource depletion and overpopulation played a huge role. One social scientist studied a village which contained only one Tutsi yet still experienced a great deal of deadly violence, as at least 5% of its residents perished. This investigator interviewed a survivor "who survived only because he happened to be away from his house when killers arrived and murdered his wife and four of his five children." This man said simply: "The people whose children had to walk barefoot killed the people who could buy shoes for theirs."[16] Jared Diamond offers this prophetic comment: "Severe problems of overpopulation, environmental impact, and severe climate change cannot persist indefinitely: sooner or later they are likely to resolve themselves, whether in the manner of Rwanda or in some other manner not of our devising, if we don't succeed in solving them by our own actions."[17]

Some of the facts I have reported this morning may be new, but of course most of us already have a general understanding of the world's environmental problems. And many of us deeply and sincerely want to do something about these problems.

One can engage in personal actions that point toward sustainability and less resource consumption. One can recycle metal, glass, and paper. One can use less gasoline. One can turn the thermostat down and put on another sweater. One can move toward a vegetarian diet. One can find ways to live more simply with fewer things.

Beyond that, one can seek a deeper awareness of one's kinship with all other life on earth. One can watch less TV and instead seek happiness that is not focused on purchasing and consuming. One can find ways to live more cooperatively with others. One can find ways to connect more directly and more frequently with the natural world. One can help create and shape and extend new ideas that can lead to new possibilities for human beings. "Ideas are the most powerful force in the human world,"[18] claims Thom Hartmann.

Personally, however, I think the world's environmental problems are far more severe than most people realize. Just this past Friday, for instance, I noticed an article in our local newspaper which began with these words: "Warmer temperatures over the past

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[15] Diamond, p. 496.
[16] Ibid., p. 328.
[17] Ibid.
[18] Hartmann, p. 217.

decade have sped up the march of Greenland's southern glaciers to the Atlantic Ocean, where the ice and water they spill contribute more to the global rise in sea levels than previously thought. Those faster-moving glaciers now dump in a year twice as much ice into the Atlantic as they did in 1996 . . ."[19] How many more similar surprises await us? But even if we do realize the severity of the world's environmental problems, finding solutions will not be easy, and it may well be that in coming decades various parts of the world will experience reduced living standards, social dislocation, serious hardships, civil war and international conflict, and perhaps even widespread social collapse accompanied by steep population decline. To answer the question posed by the title of my sermon: No, I do not think the American way of life is environmentally sustainable, especially if people in China and India and various Third World countries were to adopt current First World standards of living for themselves. Were this to happen, the total human impact on the world's environment would be twelve times what it is now.

How can individuals be helpful in solving the world's environmental problems? Jared Diamond offers two statements that I find especially helpful and challenging.

First: "We don't need new technologies to solve our problems; while new technologies can make some contribution, for the most part we 'just' need the political will to apply solutions already available."[20]

Second: "[I]t needs to be said at the outset that an individual should not expect to make a difference through a single action, or even through a series of actions that can be completed within three weeks. Instead, if you do want to make a difference, plan to commit yourself to a consistent policy of actions over the duration of your life."[21]

These comments suggest that aside from personal actions, one might strongly consider becoming more politically involved. Once can vote. One can join the Sierra Club or Greenpeace or some other environmental organization. One can read and become better informed. One could help create an environmental action group at one's church, such as the Green Sanctuary Program within the Unitarian Universalist community. One could promote legislation that recognizes the interdependence of environmental problems and oppose attitudes such as that espoused by the typical Australian landowner of several decades ago who would say, "It's my land, and I can bloody well do with it whatever I bloody please."[22] More generally, one can help discern which of our traditional core values and attitudes still serve us well and which do not, and find ways to replace non-sustainable values and attitudes with sustainable ones.

However one wants to contribute toward the solutions of the world's environmental problems, the reasons to do so are clear, and the time to do so is now.

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[19] Andrew Bridges, "Greenland's glaciers raise sea level more," Pittsburgh Post-Gazette, February 17, 2006, p. A-2.

[20] Ibid., p. 522.

[21] Ibid., p. 556.

[22] Ibid., p. 410.