

The Limits Manifesto

No Harm, No Hubris, No Hurry

In an age in which the world is showing increasingly serious signs of environmental and social disruption, a reconsideration of our basic assumptions is in order. The author states three propositions regarding limits. The first is the ethical limit against causing harm, particularly extinction to species. The second is a limit to what humans can know based on our evolutionary pedigree and the complexity and enormity of a living universe. The third limit derives from our understanding of the energy and material constraints in a sun-powered ecosphere. A creed and list of action items are offered which readers are encouraged to adopt and practice, followed by a discussion of how the Enlightenment shaped the “no limits” worldview now commonly accepted throughout the developed world and why we must reject its assumptions that nature can be fully known, controlled, and used exclusively for human benefit.

I. Vital Signs

- On January 17, 2007 The Bulletin of the Atomic Scientists moved its doomsday clock two minutes closer to midnight, “reflecting global failures to solve the problems posed by nuclear weapons and the climate crisis.”
- The 2007 report of the Intergovernmental Panel on Climate Change states that “there is a 90% chance humans are responsible for climate change,” mostly due to the burning of fossil fuels. In the parlance of scientific language, ninety percent confidence is a near certainty.
- The world’s leading petroleum geologists believe that in less than a century the modern world has burned its way through half of the global supply of oil and natural gas, and that the other half may be gone in as few as thirty years.
- The current rate of species loss is being compared to the five known mass extinction waves. Unlike meteor strikes and other catastrophic geological and astronomical events, this “sixth wave” is caused by human beings.
- Large numbers of Mexican farmers and workers are protesting the high cost of tortillas, a food staple, due to increased exports of Mexican corn to America for the production of ethanol which President Bush would like to see replace twenty percent of US petroleum use. It is a preview of the “food versus fuel” wars to come.
- Soil erosion is identified as one of our most serious environmental problems.
- One billion people lack access to fresh water.
- Two of the world’s most populous nations are on the path to becoming two of the world’s largest economies.
- Human population growth continues to follow an exponential curve.
- It is estimated that there are currently 27 million slaves in the world, more than at any other time in human history.
- Eight nations possess nuclear weapons, and two more are known to be working to acquire them.

The issues represented by this list are not separate from one another. We live in an increasingly interconnected global system the merits of which are touted with the intensity of American TV ads for beer and pick-up trucks. The costs are rarely mentioned and just as loudly discounted. And while it may go against the grain to say so, what we commonly call “progress” has produced some of the very problems we expect progress to eradicate. Advances in agriculture and medicine have led to the exponential growth of the human population, and that has put increased demands on top soil and fresh water. Technology has made more and more of the world’s fossil fuels accessible, leading to increased consumption and an increase in atmospheric carbon, leading to increased global temperatures. Worse, many of the solutions to these monumental challenges depend upon the logic of plenty: finding more oil, increasing soil and seed productivity, promoting economic growth and material consumption, utilizing more land for human food production, and even increasing human population. Each calls forth a faith in the unbounded human spirit to rise to any occasion, to conquer any foe. The recipe for success is simple: unleash human ingenuity; utilize it to harness and commodify nature’s immense and complex forces; enjoy the new and improved world that results; repeat.

Considering how many of the problems that threaten to overwhelm us are the direct consequences of this Herculean worldview, it is not unreasonable to offer an alternative approach. It begins with a statement of limits expressed as propositions. The propositions are well-established and form a foundation for thinking differently about ourselves and the world. They may sound shrill to those raised on the sign-song optimism of human “know how.” But were they to be collectively applied to our daily lives, and incorporated into the leading social and cultural “operating systems” of the modern world, it is more than reasonable to imagine a future in which the second hand of the doomsday clock moves slowly in reverse.

II. Propositions

- **No Harm:** Except for planet Earth, life seems pretty rare in the universe. Thoughtlessly and willingly destroying it or limiting the diversity and co-evolution of life, especially at the level of species, is a moral wrong among self-conscious creatures who surely know better by now.

- **No Hubris:** Human beings are not created uniquely by God. We are the unintended offspring of evolutionary biology, and as such we lack any special or pre-ordained tools for divining the world's inner workings. Closer to our cousin apes than gods in all things—and genetically 99.5 percent Neanderthal—we should refuse to think otherwise, and instead behave as if our ignorance will always exceed our knowledge. It will.

- **No Hurry:** All life depends on sunlight and the complex and integrated chemical and thermodynamic processes it powers. Life needs optimal temperature, water, soils, and photosynthesis. Net Primary Production (NPP) is the technical term that describes the energetic and organic material production of these ecosystem processes—the calories and biomass that life produces. NPP is constrained by many factors and cannot be substantially improved, increased or sped up over time without the addition of inputs from outside the system. For centuries we've been supersizing NPP by adding highly energy-dense materials (i.e., fossil fuels—the past solar income of the planet) to earth processes. Doing so, we draw down stored capital stocks created over long stretches of time by the very same ecosystemic production we seek to augment. Think of the “high density” taste of maple syrup, a gallon of which begins as roughly 40 gallons of maple sap, boiled over a very hot fire to evaporate 39 gallons. Nature provides the sap and the fire, the pans for boiling, the tools for tapping the trees, the wheat and soil fertility for the pancake flour. Not unlike the Little Red Hen in the children's folktale, it is nature that performs all of the work, and that should get all of the credit. Our high life of consumption is brought to us both by contemporary NPP and the rapid drawdown—in mere centuries—of an eon or more worth of accumulated fresh water and highly energy-dense materials. Across the board this drawdown is increasingly noticeable. We are reaching the limits of exploitation of soils, aquifers, fisheries, oil and natural gas. In the grand sweep of human history and culture, these are one-time draw downs. In the industrial era, our species has been like the college undergraduate cramming for exams who uses caffeine and amphetamines to artificially augment his stamina. Like that undergraduate, we will learn that when it comes to sustainable activity we can't do better than nature. If we can't speed up natural processes, then our only option is to slow ourselves down.

III. The Creed

These propositions imply a creed, one worthy of repetition privately, publicly, aloud, silently:

“I accept The Limits Manifesto Propositions regarding moral behavior, the pursuit of knowledge, and the use of the earth’s material and energy productivity, and I hereby pledge no harm, no hubris, and no hurry in my daily thoughts and actions.”

IV. Action Items

How then should we live our lives? The Creed implies some general heuristics. The list below is wide-ranging and inclusive, and you are invited to make additions and to adapt them to your context, interests, and projects.

- Don’t always think you know better.
- Become an Ambassador of Limits.
- Block unbounded faith—your own and others’—in the “No-Limits” dogma peddled by technological optimists, economic theorists, and those who believe that “future” and “greater economic activity” are synonymous.
- Offer no hope about the immense problems we face before the full scope of the limits challenge is clear and understood.
- Insist on some sign or evidence from others that they understand the full scope of the limits challenge.
- Don’t be nasty or condescending about any of it.
- Clarify assumptions that violate one or more of The Limits Manifesto Propositions.
- Count the number of times in a given day your motivations, choices, and actions make use of the most primitive parts of your primate brain. Multiply by 6.6 billion.
- Show no enthusiasm for attempts to improve on nature’s efficiencies. Such schemes always cheat by drawing down natural capital stocks somewhere else in the system.
- Acknowledge the Net Primary Production of sun-powered ecosystems as the only long-term energy-material feedstock for sustaining life on Earth.

- Slow down. And when going fast (car, plane), admit your role in the global run on the natural capital bank.
- Welcome limits as one of the initial and permanent operating conditions for any solar system—especially one with life in it.
- Resist solutions to current environmental problems that ignore the size of the human population as a central factor limiting the ability of the rest of the planet’s life-community to thrive.
- Resist solutions that create harm or extinction to fellow creatures.
- Count calories. Not just the ones consumed, but those embodied in our everyday products as well.
- Understand and appreciate the role that the so-called inanimate world of soils, minerals, and elements—particularly nitrogen, phosphorus, potassium, calcium, sulfur, and magnesium—play in your life.
- Demand a public and accurate accounting of our Net Primary Production feed stocks and capital stocks.
- Demand that losses of natural capital be accounted for in any calculation of costs and benefits.
- Don’t rush natural processes, or to judgments about those processes.
- Discount efficiency when it is offered as nothing more than a clever way to increase consumption (Jevons Paradox).
- Accept blame yourself.
- Don’t let good friends off the hook about limits.
- Honor your debt to the universe by drinking a toast to its—and your—continued existence. You can do this every day.

V. Motivation

The Limits Manifesto unites individuals and institutions around a few central beliefs that, if not truths, at least provide a foundation for a new and improved way of looking at the world. It relies on a base of knowledge that describes the state of the world as we best understand it now, and suggests a range of choices and actions consistent with this understanding. It contributes to the process—and by necessity a greatly speeded up process—of curtailing the many ailments of our global home and its myriad inhabitants. The factors mitigating these ailments will be many and varied, but they will be more robust and durable if they conform to a few basic principles with which large numbers of individuals and organizations can agree, and around which corrections and adjustments can coalesce. It is difficult to think of any great social revolution that lacked a basic and common core of beliefs shared by its members. And it is a great social revolution that we are talking about here, as important as any other in human history.

Those who accept The Limits Manifesto will agree to sequester their squabbles over the details and fine print, and suspend their well ingrained urges to find yet more evidence for its veracity. Nor should they argue for pride of place in marshalling change. Let us agree that it is enough to say that our first proposition, the physician's byword, is a moral truth as old as the world's oldest philosophies and religions. The second, more than a century old, is derived from a clear, rational, scientific understanding of our origin as a species. The third proposition is a less well known, but an equally established understanding about the origin, nature, and supply of the energy that fuels life. "All flesh is grass," Isaiah said, capturing the thermodynamics of ecosystems in a four-word assertion.

There's nothing wrong with marshalling more evidence for these propositions. The purpose of the Manifesto is not to marshal that evidence but to state those propositions as truths that are now and must more generally be seen to be self evident. For those who need a more formal terminology, the three propositions can be labeled ethical, epistemic, and ecosystemic.

To say that The Limits Manifesto is self-evident does not make its conclusions easy to accept, especially for those of us who have spent our entire lives within a cultural worldview that has lured, seduced, and commanded us to deny and transgress limits. People with college degrees call this worldview the Enlightenment; everyday folks call it Freedom. It is a worldview born roughly four hundred years ago in Europe, and it introduced an across-the-board "No Limits" perspective for the first time in human history. This perspective is mirrored and articulated in the work of many progenitors, who, if we are feeling generous, may be excused for mistaking nature as infinite and infinitely malleable when humans were a scarce, weak species pursuing their projects in the small clearings that culture made on our very sizable planet. From their vantage, Johannes Kepler, Nicolaus Copernicus, Galileo Galilei, John Locke, Thomas Hobbes, Francis Bacon, Baruch Spinoza, Isaac Newton, Voltaire, Pierre Bayle, Charles de Montesquieu, and others could scarcely anticipate the problems of scale that would arise when their ideas and programs were amplified into a human culture weighing in at 7 billion souls. Many of them did their work in England,

Scotland, the Netherlands and France, all of which provided conditions in which thinkers could more easily begin to break free from the grips of Scholasticism, Aristotelianism (particularly in science), and the powers of Church and Crown. Each of these thinkers provided central pieces of the Enlightenment project and laid the groundwork for the revolutions to come.

One of the earliest and primary sources of the Enlightenment perspective is the work of French philosopher and mathematician Rene Descartes. He challenged himself to nothing less than putting the human capacity to know the world on an entirely new and—he hoped—foolproof philosophical footing. His work is emblematic of Immanuel Kant’s claim that the motto of the Enlightenment should be “Dare to Know.” Descartes describes his discoveries after a day-long meditation in a stove-heated room. The date was November 10, 1619. The subject matter was dreams, the world, God, and, most importantly, the ability of the individual human mind to first doubt all of it, and then to reconstruct—on its own terms—every bit of it in way that would guarantee truth. Descartes’ reward, and to date the modern world’s reward, is a knowledge-based system centered on individualized human consciousness which has brought with it remarkable success in making and unmaking the world, seemingly without limits, for the exclusive benefit of humankind. As Voltaire remarked, “Descartes gave sight to the blind, and the course he opened to us has since become boundless.”

This Cartesian moment helped make possible the three revolutions that have been identified with the Enlightenment: scientific, political, and economic. Together they freed cultures to embark on pursuits that were heretofore forbidden or considered impossible: the control of nature; the creation of economies and technologies that went far beyond subsistence; the freedom of individuals from governments, religious and family traditions, and the past; and a belief in human progress that is separate from evolution and largely unencumbered by moral and spiritual beliefs.

It is not surprising that such a perspective is popular around the world. Fueled by ever-increasing amounts of monetary wealth, energy, materials, knowledge, and personal freedom—and grounded in deep-seated philosophical beliefs that transgress limits—it has produced marvels. The genius of the Enlightenment project consists of answering every challenge and hurdle with the call for more knowledge, more freedom, more energy and materials—a more vigorous assault on any experience of limit. It is a positive feedback loop of biblical proportions. Positive feedback loops are very powerful, but they are also potentially dangerous and unstable, and this one has created global challenges that are becoming impossible to deny: climate change, species loss, loss of essential ecosystem services (such as nutrient recycling, water purification, and climate moderation) from loss of natural capital among them.

The astonishing and flashy feats of the Enlightenment worldview make revision or outright abandonment of it seem a Quixotic task. But whatever its age or name, the world is being shaped by a failed perspective the dangers of which now greatly outweigh the benefits.

To maintain the Enlightenment project of freedom from compulsion—to maintain a level of human civilization beyond the most grindingly oppressive subsistence—we'll have to put *some* of the limits back.

Which is to say: the Enlightenment got it half right about freedom from limits. We are better off without traditions and social hierarchies that oppress our freedoms and choices in our personal and political lives, and that force us to act against our will. The half that the Enlightenment did not get right has to do with our attempts to escape the constraints and confinements imposed upon us by our place within a larger system, “Nature.” It is this latter half that The Limits Manifesto addresses. The elephant-in-the-room question, however, that no one is willing to address honestly is: “To what extent does freedom from political and social oppressions depend upon the freedom to continually draw down our stocks of natural capital?” That is, how much does “freedom from” depend upon “freedom to,” and how is “freedom to” constrained by The Limits Manifesto?

We can, of course, continue to both deny and transgress The Limits Manifesto. We can deny it until kingdom come. But it can be transgressed only a little while longer. The definitive character of an unsustainable system is that it will, it must, change.

Any species in nature reproduces to the limits of its food supply—and we have not exempted ourselves from that truth even as we learned how to commandeer the niches of other species and to turn the planet’s vast stores of past solar income (oil) into grass and (human) flesh. If any other species or human culture were given the same access to resources and energy, a moral green light for their use, and effective techniques for blocking natural negative feedback loops, we would see roughly the same outcomes. Given continual replenishments of food, bacteria in a Petri dish will multiply until they die *en masse* on their accumulated wastes. We are as bacteria, with two exceptions: our flashy brains and the absence of similarly-brained competitors have made us capable of extending our reach—and consequently widening the range of our negative effects. In both we harm and destroy other life.

The Genesis creation story says as much. Adam and Eve (with or without the foreknowledge of their creator) ate from the Tree of Knowledge and in that moment fell from animal innocence into conscious human life. The Lord, for his part, then cast them from their garden idyll, and, interestingly, “to the east of the garden of Eden he stationed the cherubim and a sword whirling and flashing to guard the way to the Tree of Life” (Genesis, 3:24). The author of those words had some inkling of the need to protect the panoply of life from the destructive potential that a willful species with a well-developed frontal cortex could unleash on the rest of the world. Those who still want to hold on to the idea that there is something unique about human beings may yet be comforted if and when we learn to limit ourselves, using our stolen property (knowledge) to consciously protect the Tree of Life. If we do so, it will be an act as unprecedented as our control of fire.

Finally, it is hoped that a full-bodied acceptance of The Limits Manifesto will, on average, bring more lightness to its adherents than fear and loathing. Even a brief meditation on limits demonstrates their power and creativity. The universe itself operates, surely, due to the limits we call the laws of nature. Alphabets, musical notations, rules of grammar and

harmony, and even the rules of chess and other games, all create limits on what we can say, think, and do; and all provide enormous opportunities for creativity and freedom. The best accounts of justice put limits on some so that many can thrive. It's time to shed our despairing attitudes about the constraints expressed in The Limits Manifesto, and instead find in them the powers of restoration, insight, and joy.

VI. The Gist

Properly understood The Limits Manifesto is invigorating rather than paralyzing. It encourages creativity, and it invites one to challenge institutions, friends, and family; and to imagine alternatives. Use it in your everyday life; in discussions about the news or politics; to organize clubs; to generate goals; to help resolve questions and dilemmas; to feel more at home in the world.

No Harm. No Hubris. No Hurry.

Spread the Pledge.

Bill Vitek, Associate Professor of Philosophy
Department of Humanities and Social Science
Clarkson University, Box 5750
Potsdam, NY 13699-5750
315 268 6668
Vitek@clarkson.edu