**It’s the Economy, Stupid! *And* Environment: an Urgent Reminder**

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The current economic/political system, neoliberalism, has touched every aspect of life; globally. The doctrine of neoliberalism consists of three central propositions, that the market is real and part of the natural universal law; that unlimited economic growth is both possible and even desirable; and that human nature is coincident with market values and based solely on self-interest. All three of these propositions are seriously flawed and have caused immense human suffering and staggering environmental destruction. This paper is a *reminder* of the failures of neoliberal policy and an appeal for change to a new institutional arrangement where development trumps economic growth. This is in contrast to Francis Fukuyama’s end-of-history thesis. He alleges there are no economic/political ideologies to compete with neoliberalism, the “TINA principle: There Is No Alternative” – the West has won. It is time to reintroduce H. D. Thoreau’s and to a lesser extent Adam Smith’s moral economies. Both have encourgaging insights, often overlooked by current academic economists, which could figure prominently in the conception of a new economy.

Key Words: Henry Thoreau, Adam Smith, neoliberalism, weak & strong sustainability, entropy, ethics.

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I. Introduction

*“This world is a place of business. What an infinite bustle!...I think that there is nothing, not even crime, more opposed to poetry, to philosophy, ay, to life itself, than this incessant business.”*

Few have ventured as earnestly and seen as clearly the inherent connection between economy, environment, and ethics as Henry David Thoreau. If self-reform is the ongoing activity of weeding out preferences in order to cultivate values, which I take to be the essential point of *Walden*, then economy is the foundation of character and occupies a central place in human affairs. It cannot be relegated to a small corner of culture as a marginal activity separate from a complete human life: “Economy is a subject which admits of being treated with levity, but it cannot so be disposed of.” Economy is central to a moral life, since it provides a way to explore which of our capacities to nurture and which to leave fallow. And if economy is essential for a whole life and as Thoreau claimed, “…our whole life is startlingly moral,” then economy is a normative exercise in understanding our fit within the expansive realm of nature and culture where our capacities can be tested.

Unfortunately, “...man’s capacities have never been measured; nor are we to judge of what he can do by any precedents, so little has been tried.”[[1]](#endnote-1) Here Thoreau laments the ease of conformity by which his countrymen lead their desperate lives and adumbrates what later will be known as the TINA principle (There Is No Alternative): “...it appears as if men had deliberately chosen the common mode of living because they preferred it to any other. Yet they honestly think there is no choice left.”[[2]](#endnote-2) In the world of *Walden* and far beyond, economy is a means by which your goals become the principled equivalent of self-improvement. Economy is about fit; a balancing act in which choices are bestowals of value and *just* work is the heroic task of moral reform, or what Thoreau calls “morning work”: “Every morning was a cheerful invitation to make my life of equal simplicity…with Nature herself…morning brings back the heroic ages…Morning is when I am awake and there is a dawn in me. Moral reform is the effort to throw off sleep.”[[3]](#endnote-3) It is through our economic choices that we create the substance of our moral character. Thoreau, like Aristotle centuries before, recognized that restrictions must be placed on the accumulation of wealth, and that mere preferences must be suppressed without turning into neurosis, or conversely being satisfied to the point of pathology (affluenza or “illth”[[4]](#endnote-4)). In this, Thoreau is repudiating two axioms of contemporary economics: “…that our ultimate goals in life are arbitrary, mere ‘preferences’ beyond the range of rational debate, and that human beings have infinite desire for wealth…”[[5]](#endnote-5)

In light of the above, I have also been thinking about Thoreau’s complaint, “There are nowadays professors of philosophy, but not philosophers”[[6]](#endnote-6); that today philosophy is no longer a lived experience, a way of life that requires us to give an account (*apologia pro vita sua*), to challenge the “common mode of living” and to remind ourselves that “It is never too late to give up our prejudices.”[[7]](#endnote-7) Thoreau’s is not a dogmatic rejection of philosophy but a reminder of what it has been and could become if we consider economics as central to the moral integrity of the individual. Commenting on the narrowness of his Harvard education, Thoreau remarked that only political economy is taught, “…while that economy of living which is synonymous with philosophy is not even sincerely professed in our colleges.”[[8]](#endnote-8) James Reid observes, “His [Thoreau’s] principal complaint against newly established philosophical practice is that it fails to live up to philosophy’s original promise to teach a better way of life and to word the world of human experience and experiment accordingly.” [[9]](#endnote-9)

Although Karl Marx’s approach to social action was collective and Thoreau’s decidedly individualistic (at least during his Walden years) they share a genuine desire for economic reform. I do believe Marx’s is correct, that beyond studying the world we need to change it: “The philosophers have only interpreted the world, in various ways; the point is to change it.”[[10]](#endnote-10) Yet to give an account of oneself in today’s world is an act of heroism morally more congruent with fifth and fourth century Athens than this twenty-first century age of denial. It demands that we reject the fundamental values of our established institutions. Postmodernity aside, we live in and through glossed and, to a large degree, disfigured Enlightenment institutions. The deformity of which I speak is neoclassical welfare economic theory in the context of neoliberal thought.[[11]](#endnote-11) An alternative, yet to be articulated in any operational form, is sustainable development (sufficiency provisioning or steady-state economy).[[12]](#endnote-12) It is not within the scope of this essay to explicitly make the case for sustainability, but it has been made, convincingly.[[13]](#endnote-13)

The virtues of a life clarified by the contours of nature cannot be realized until we abandon the goals of manufacture and trade (neoclassical market principles) that has, “…built for this world a family mansion, and for the next a family tomb.”[[14]](#endnote-14) Thoreau’s “morning work” continues to add significant philosophical justification for an alternative to the economic-political maelstrom engulfing the world. This hortatory essay is an exercise in what Thoreau might call “redemptive remembering,” an exercise in retelling – retelling the inherent contradictions of neoliberalism, while also suggesting a transition to a new institutional arrangement. I have no claims to originality in what follows. Nor do I introduce novel trajectories of thought to address the issues enumerated below. My contribution is to *re*-mind us of the immanent perils to all life on earth if we continue our present unsustainable course, and maybe this restatement will help us to realize that the deceits of neoliberalism are sufficient motivation for aggressive change.

With this approach I follow visionaries like Herman Daly and John Cobb, “…the failures of the discipline of economics [neoclassical] as now practiced have to be shown before there is much chance of reconstructing economics on a different basis;” and John Gowdy, et al., “The criticisms of the standard economic model are well known and it is tedious to have to keep repeating them. But the discredited assumptions of welfare economics refuse to die a natural death and as long as they continue to dominant our discourse, they must be confronted.”[[15]](#endnote-15) Clive Hamilton, adds to this litany of frustration, “The fact that neoliberalism remains unchallenged is extraordinary given the events of recent history, for laissez-faire capitalism has been marked by devastating failures...the cost of economic growth [are apparent] in the form of disturbing signs of ecological collapse, an array of social problems that growth has failed to correct, and epidemics of unemployment, overwork, and insecurity” [[16]](#endnote-16) The task, then, is to show the inherent flaws of neoliberalism, and to recast and restore those economic values (the virtues of “right living”) Thoreau considered necessary for human well-being, but scorned today by neoliberals. I begin by denying that the West has won!

II. The End or Edge of History?

***“When the system forces ordinary people to become revolutionaries, you know you’re no longer at the End of History. You’re at the very edge of it.”****[[17]](#endnote-17)*

In his controversial article “The End of History,” Francis Fukuyama declared that history is over. He argued that if history is the ongoing clash between dominant ideologies, once conflict ends, so does history: “What we are witnessing is not just the end of the Cold War, or the passing of a particular period of post war history, but the end of history as such: that is, the end point of mankind’s ideological evolution and the universalization of Western liberal democracy as the final form of human government.”[[18]](#endnote-18) At the time of his writing, the Soviet Union, then the lone competing ideology, collapsed and democratic liberalism became the only real alternative. According to Fukuyama, liberal democracy will prevail because it is free from the flaws that beset its rivals, which “…were characterized by grave defects and irrationalities,” whereas liberal democracy “...is arguably free from such internal contradictions.”[[19]](#endnote-19) He was mistaken. [[20]](#endnote-20) History is not over!

Sadly, we continue to adhere to the status quo, preferring an ossified stubbornness disguised as principled belief—a contrived decency that neutralizes crime and shelters greed. With two competing worldviews, we are forced to ask inconvenient questions that until recently only appeared in dystopian fiction, and biblical or secular eschatology. For what is at stake is the future of healthful life on this planet.

We can no longer approach these issues with detached sobriety or what Richard Hofstadter called “studied ignorance.” Issues of this magnitude cannot be conveniently dismissed as doomsday testimonials by misguided refugees from industrial society. I believe the perils are real, numerous and frighteningly near. I fear the direction we are headed and the future we can expect possess many of the conditions associated with the dismal landscape envisioned by Reverend Thomas Malthus or, if you prefer, with a Hobbesian state of nature, where, in our particular case, nature is pauperized beyond safe use and the lives of our children and their children are, “…solitary, poor, nasty, brutish, and short…” Less dramatically, but no less accurately, our collective future is bleak: Resource shortages are a daily concern for billions of people; chemical pollutants are reaching levels of saturation in the air, water and food; the unpredictability of global climate change looms large; unstable political regimes in possession of nuclear weapons compete for scarce resources; right-wing extremists control political office as they work out a cruel politics of austerity; there is an exponential increase in human population and the widening wealth-gap responsible for debilitating global poverty. We must acknowledge that we have reached the point where it is no longer credible to deny that conditions for life on earth are rapidly deteriorating.[[21]](#endnote-21) The dignity of a human life is eroded as we rush toward universal commodification—the goal of neo-liberalism. [[22]](#endnote-22) To ignore these as signs of impending catastrophe is to commit crimes against life.

What brought us to this state of raw existence?

III. Neoliberal Thought

*Neoliberalism is a philosophy in which the existence and operation of a market are valued in themselves, separately from any previous relationship with the production of goods and services, and without any attempt to justify them in terms of their effect on the production of goods and services; and where the operation of a market or market-like structure is seen as an ethic in itself, capable of acting as a guide for all human action, and substituting for all previously existing ethical beliefs.[[23]](#endnote-23)*

Neoliberalism needs little *informal* introduction. We wake to it, are incessantly molested by it throughout the day and cannot even escape it in sleep: We dream it (automobiles, electronic gadgets, latest fashions, etc.). It is so familiar and deeply entrenched in Western culture, as to seemingly resist any challenge to its portrayal of reality. Henry Grioux defines neoliberalism as, “...an ideology and politics buoyed by the spirit of a market fundamentalism that subordinates the art of democratic politics to the rapacious *laws of a market economy* that *expands its reach to include all aspects of social life* within the dictates and values of a market driven society.”[[24]](#endnote-24) And for Fredric Jameson, “The market is *in* *human nature* [and this] proposition...cannot be allowed to stand unchallenged; in my opinion, it is the most critical terrain of ideological struggle in our time.”[[25]](#endnote-25) Simply put, neoliberals put the market ahead of people believing that humans exist for the market and not the other way around; similarly nature exist for economic exploitation. It will become clear as we proceed that neoliberalism is an ideology disguised as economic reality.[[26]](#endnote-26)

The above quotations (along with the epigraph) provide the basic principles of neoliberal thought: 1) the market is real and governed by natural law, 2) the logic of the market is to grow and accumulate, i.e., “unlimited growth,” through universal commodification, 3) human nature is coincident with the natural law of the market. The edifice of neoliberalism rests on these three interrelated propositions. I will now briefly consider each separately.

The Reality of the Market

*When economists find that they are unable to analyze what is happening in the real world, they invent an imaginary world which they are capable of handling.[[27]](#endnote-27)*

The abstract reality of the market has its origins in the scientific revolution with the classical mechanics of Newton: “To put it bluntly…the progenitors of [economic] neoclassicism copied down the physical equations and just changed the names attached to the variables.”[[28]](#endnote-28) Robert Nadeau explains, in more detail, how physics was incorporated into economic theory: “The strategy used by the [classical] economists was remarkably simple—they took the equations from the mid-nineteenth century physical theory and changed the names of the variables. Utility was substituted for energy, the sum of utility for potential energy and expenditure for kinetic energy….none of these now famous people seemed to realize that the sum of income and utility in neoclassical economics, much less in economic reality, is not conserved and that the conservation principle is quite meaningless in any real economic process. Nevertheless, this blatantly unscientific assumption is now used to legitimate the existence of the invisible hand in its current form—constrained maximization in general equilibrium theory.”[[29]](#endnote-29) Thus, the market is as real as gravity.

Karl Polyani, in his brilliant and enduring rewriting of the history of the market economy and its separation from social realities, explained how the market was naturalized: “As gradually the laws governing a market economy were apprehended, these laws were put under the authority of Nature herself…Essentially, economic society was founded on the grim realities of Nature.” Applying natural law to poverty, for example, he states, “The true significance of the tormenting problem of poverty now stood revealed: economic society was subjected to laws which were *not* human laws.”[[30]](#endnote-30) These were natural laws working with machine-like precision as economist Daniel Bromley explains, “The Smithian system operates on the principle of mechanism...the economy of Adam Smith, defined by the centrality of divisible commodities delivering utility to those who consume them, is simply a machine. The Smithian machine is informed by Newtonian mechanics.”[[31]](#endnote-31)

Two recent Noble Laureates in economics warmly embrace this mechanical-mathematical claim. Robert Solow confidently asserts, “There is a single universal model of the world. It only needs to be applied. You can drop a modern economist from a time machine, at any time, in any place, along with his or her personal computer, and he or she could set up business without even bothering to ask what time and which place.”[[32]](#endnote-32) And not to be misunderstood or outdone, Milton Friedman exclaimed, “So that the record of history is absolutely crystal clear. That *there is no alternative way*, so far discovered, of improving the lot of the ordinary people that can hold a candle to the productive activities that are unleashed by a free enterprise system.”[[33]](#endnote-33) So when neoliberals speak of the reality of the market they are not merely expressing a belief in the efficacy of market forces as one among other possible systems of exchange and competition. They are claiming that the market is the only legitimate (and moral) form of exchange. Another way to say this is that the market is separate from the factual production of goods and services: It is real as an end in itself.

A moment’s thought reveals the baselessness of this claim. For thousands of years societies have existed without the market. In his epic work *Essai sur le don*, anthropologist Marcel Mauss claimed that years of research found no empirical evidence of a “natural-by nature” economy: “It appears that there has never existed, either in the past or in modern primitive societies, anything like a ‘natural’ economy.”[[34]](#endnote-34) Karl Polyani, in his typically direct fashion, wrote “Previously to our time, no society has ever existed that, *even in principle*, was controlled by markets.” He continues “There is nothing natural about *laissez-faire*; free markets could never have come into being by merely allowing things to take there course.”[[35]](#endnote-35) Stubbornly, neoliberals summarily dismiss the evidence that challenges their increasingly questionable theories. [[36]](#endnote-36)

 Philosopher Claudia von Werlhof also stresses the historicity of economic structures, “Some go so far as to suggest that neoliberalism and its globalization—meaning, a specific economic system that developed within a specific socio-historical circumstances—is nothing less than a *law of nature*. In turn, ‘human nature’ is supposedly reflected by the characteristics of this economic system: egotistical, ruthless, greedy, and cold. This we are told works towards everyone’s advantage.”[[37]](#endnote-37) While economist/sociologist Juliet Schor remarks, “Neoliberal ideology has predisposed many to view market outcomes as natural or even fair and has obscured the underlying biases, subsidies, and distortions associated with current market rules and structures.”[[38]](#endnote-38) One would think that the weight of evidence against the reality of the market would silence, if not embarrass, the proponents of market realism. But looming above and supporting the reality of the market is a powerful providential force that resists a rational explanation, while making a mockery of trust and community, the *invisible hand*.

The invisible hand has a long and checkered past. Decades before the Scottish moral philosopher popularized the phrase, Bernard Mandeville repeats the ancient wisdom that individual vices create the common good: “Fraud, Luxury, and Pride must live/Whilst we the benefit receive.” “Vast numbers thronged the fruitful hive; yet those vast numbers made ‘em thrive; Millions endeavoring to supply/Each other’s Lust and Vanity.”[[39]](#endnote-39) That private vices become public virtues has not escaped ridicule from critics of market fundamentalism. For example, John Boli quips: “The invisible hand is a mystical god, working in mysterious (or at least unexplained) ways with more than a touch of miracle to produce a holistic beneficence that is not predictable from the unholy motivations of self-interested actors.”[[40]](#endnote-40) Others have taken swipes at the existence of the invisible hand. Notably, Nobel Laureate in economics, Joseph Stiglitz remarked, “…the reason that the invisible hand often seems invisible is that it is often not there.” It tends to take cover in the mathematical formalism of the system when issues of market externalities are voiced, or when government research leads to important scientific breakthroughs coveted by industry.[[41]](#endnote-41) Noam Chomsky reminds us that, “He [Smith] had few illusions about the consequences. The invisible hand, he wrote, destroys the possibility of a decent human existence ‘unless government takes pains to prevent.’ It destroys community, the environment, and human values generally...He warned that if British manufactures, merchants and investors turned aboard, *they* might profit but England would suffer.”[[42]](#endnote-42) As market failures (externalities)[[43]](#endnote-43) proliferate it is increasingly difficult to conjure the invisible hand to explain such phenomena.[[44]](#endnote-44)

It would appear as if the neoclassical/neoliberal paradigm is advancing toward what Thomas Kuhn called “anomaly and crisis.” [[45]](#endnote-45) At this stage in the neoclassical paradigm “normal science” and its “puzzle solving” activities cease to provide meaningful solutions to the antimonies of externalities, asymmetries in information, and the inaccuracies of rational expectations models of consumer behavior. For example, psychologist Daniel Kahneman received the Nobel Prize (2002) in economics for his research demonstrating that individuals regularly act less rationally than neoclassical economists believe they do. Vernon Smith, founder of experimental economics, for which he too received the Nobel Prize in 2002, has conducted successful laboratory experiments showing the irrationality of market participants thus poising a serious challenge to rational choice theories and consumer preference schemes.[[46]](#endnote-46)

Yet these challenges to market dogma do not deter the practitioners of neoliberalism, whose defense is to widen the gap between theory and practice. One example of this tactic is to “increasingly formalize their theory, making it progressively irrelevant to understanding economic reality.”[[47]](#endnote-47) Georgescu-Roegen, an early contributor to mathematical economics only to latter champion an ecological approach, remarked, “…in economics there is a vast and growing literature of purely mathematical exercises that correspond to absolutely no facts, not even physical ones. If one starts only with mathematics, one is trapped inside it and cannot even think of the epistemological issues…” [the economic system that emerges is] “Isolated, self-contained and ahistorical process…a circular flow between production and consumption with no outlets and no inlets.” [[48]](#endnote-48) Gowdy et al. would have us recall that the core model of neoclassical welfare theory is derived from the work of the nineteenth century political economist Leon Walras, who is “…driven by mathematical requirements of the calculus of constrained optimization, and they are at odds with generally accepted scientific evidence.” The mathematical assumptions of the model include, “…economic agents make decisions independently of the actions of any other agent; prices are capable of carrying all the information needed to ensure an efficient allocation of consumer goods and the productive inputs that produce them; every market good and every productive input has close substitutes…scarcity is relative not absolute.” [[49]](#endnote-49) This last assumption is critical for the justification of unlimited growth, as we will se below.

These critical observations and recent work in behavioral and institutional economics go far in acknowledging Stiglitz’s claim that contemporary economics has succumbed to the “triumph of ideology over science.” The invisible hand is on a phantom limb and the market is a social construction subject to change.

1. Unlimited Economic Growth

*“Howsoever we may succeed in making ourselves more space within the limits set by the constitution of things, we know that there must be limits.”* [[50]](#endnote-50)

Lawrence Summers disputes the above epigraph: “The idea that we should put limits on growth because of some *natural* limit [finite natural resources] is a profound error...We cannot and will not accept any ‘speed limit’ on American economic growth. It is the task of economic policy to grow the economy as rapidly, *sustainably*, and inclusively as possible.” [[51]](#endnote-51) This is the growth imperative of neoclassical welfare economic thought. And what it amounts to is the counterintuitive claim that production can proceed without natural resources. Solow asserted as much in his influential Richard T. Ely lecture, “…the world can, in effect, get along without natural resources, so that exhaustion is just an event, not a catastrophe.”[[52]](#endnote-52) His conviction stems from a model he developed in 1974. The central argument of his growth model is that well-functioning markets will detect impending shortages and correct them through innovative technologies that will produce substitutes for declining natural capital.[[53]](#endnote-53)

The classical approach to economic production included capital in the form of land, labor, buildings, and machines. This is often referred to as “fixed capital.” Then there is “circulating capital,” the raw materials embedded in outputs and foodstuffs. According to J. S. Mill, the distinguishing feature of fixed capital is that it is “more or less permanent…and the efficacy of which is not exhausted by a single use.” On the other hand, “Capital which in this manner fulfils the whole of its office in the production, in which it is engaged, by a single use, is called Circulating Capital.”[[54]](#endnote-54) Under this interpretation material resources are part of the production process and respond to physical laws. Increased output required increased input of natural resources; the amount of timber depended on the number of trees (circulating capital) not sawmill capacity (fixed capital). It is no longer the technical ability to catch fish that is the limiting factor, it is the fish themselves.[[55]](#endnote-55) In other words, fixed and circulating capital were considered *complementary*; substitution between the two was not acknowledged.

As industrial production began to overtake agricultural production at the end of the nineteenth century foodstuffs were absorbed by the manufacturing sector, until gradually only labor and capital had any relevance for production. Explaining the transformation of classical to neoclassical theory, Richard Heinberg notes that it was “...the gradual deletion by economists of *land* [nature] from the primary ingredients of the economy (increasingly, only labor and capital really mattered, land having been demoted to a subcategory of capital.) This was one of the refinements that turned classical economic theory into *neoclassical* economics; others included the theories of utility maximization and rational choice.”[[56]](#endnote-56)

The most significant outcome of these historical changes was to conceal and eventually collapse the distinction between substitutes and complements. In effect what happened was that the biophysical restraints placed upon production were removed. (Solow’s claim stated above.) In other words, economists treated labor as variable and nature as constant. But, as Herman Daly and other ecological economists have argued, the relationship between resources and production is, in *critical* cases, complementary.[[57]](#endnote-57) The entire issue of unlimited economic growth and the possibility of a sustainable economy rest on the distinction between substitute and complement: The question: “Is constructed capital a *near perfect substitute* for natural capital?”

 The reasoning supporting limitless economic growth can be stated as follows: In an exchange economy when a resource becomes scarce its price will rise and demand falls, this will set in motion a search for a replacement and/or a new technique to reduce resource input, but in either case prices will decline thus solving the scarcity problem. (This is essentially a restatement of the Walrasian assumption that prices will ensure efficient allocation.) According to “resource optimists” the replacement resource can either be constructed or natural capital. This economic reasoning supports a position widely known as “weak sustainability” – what Eric Neumayer calls the “substitutability paradigm,” and Bryan Norton labeled the “Grand Simplification”, while Georgescu-Roegen called it a “conjuring trick.”[[58]](#endnote-58)

A standard approach in neoclassical welfare economics is to view constructed capital and natural capital as interchangeable (fungible). Thus constructed capital can substitute for degraded or scarce natural capital if we can accurately price natural capital, and in order to get the prices right there must be a single exchange value to compare natural capital – ecosystem services like biodiversity and assimilation – to nuclear reactors, for example. As you might imagine it is a notoriously difficult exercise regarded by many as an impossible task given the complexity and dynamics of ecosystems? [[59]](#endnote-59) (Thoreau framed the undertaking this way, “And, by the way, who estimates the value of the crop which Nature yields in the still wilder fields unimproved by man?”)[[60]](#endnote-60)

However, there are those more sanguine about their ability to get the prices right. For example, Solow claims, “History tells us an important fact, namely, that goods and services can be substituted for one another. If you do not eat one species of fish you can eat another species of fish. Resources are, to use a favorite word of economists, fungible in a certain sense. They can take the place of each other. This is extremely important because it suggests that we do not owe the future for any particular thing.” [[61]](#endnote-61) But as Daly has pointed out the issue is not substitution between natural resources – species of fish – the real issue is substitution between constructed and natural capital.[[62]](#endnote-62) Nevertheless, Solow’s key point is that what we owe the future is a *constant* stock of capital where constant means non-declining utility. Thus the real issue as he sees it is merely a provisioning problem. As long as we leave future generations the capital to satisfy their preferences, which are alleged to be beyond present-day knowledge, we have fulfilled our obligations to them. Bromley’s comment on Solow’s version of weak sustainabilityis instructive: “This [intergenerational equity] is treated...as a problem of assuring that the capital stock – whether natural or constructed – is adequate to provide a level of consumption for each future generation not less than that enjoyed by the current generation.”[[63]](#endnote-63) In other words, given that constructed and natural capital are interchangeable it is alright to run down environmental goods like ecosystem services and ozone protection as long as we leave enough constructed capital (domed cities; protective clothing from ultra-violet radiation, etc.) to compensate for any loss of utility. [[64]](#endnote-64)

I introduced this section with a quote from Larry Summers and now I would like to highlight one aspect from the quote, “…to grow the economy as rapidly, *sustainably*, and inclusively as possible.” What Summer is calling for is sustainable growth or what Daly calls “an impossibility theorem.” Daly proposes that we look at the economy as, “…an open subsystem of the earth ecosystem, which is finite, non-growing, and materially closed. As the economic subsystem grows it incorporates an ever greater proportion of the total ecosystem into itself and must reach a limit at 100 percent, if not before. Therefore its growth is not sustainable.”[[65]](#endnote-65) By characterizing the economy as an open system all negative feedback loops are closed thus removing any restrictions on growth. Substitution of constructed capital for natural capital is unlikely if not impossible, especially *critical* capital, like the atmosphere; therefore unlimited economic growth is impossible as Daly and other ecological economists claim. But resource depletion is not the only concern regarding economic growth. The intractable problem confronting growth theorists is energy waste.

 Every production process transforms energy from a state in which it is able to churn the wheels of production to one in which it cannot be used for work. Once that log in the fireplace has burnt there is no reconstituting it. The energy released from the log cannot be captured and reused, although the same amount of energy remains constant. Put another way, *homogenous* energy is useless for production. Additionally, at the end of every production process waste is created in the form of pollution. With the goal of unlimited production, eventually we will exceed the capacity of natural systems to absorb the waste leading to a decline in the health of ecosystems and their eventual collapse.[[66]](#endnote-66) Heinberg predicts that: “One way or another – whether through planning and methodical reform or through collapse and failure – our economy is destined to shrink not grow.”[[67]](#endnote-67) Economist Jerry Mander agrees and claims that the time has come for a radical change, “With a diminishing resource base on a finite planet, and a limit to planetary carrying capacities, systemic capital growth cannot possibly be sustained forever as if it were disconnected from all that, nor can profits, stock values, investment levels, or large scale capitalism itself. What may have worked in 1890 and 1950 is absurd in 2012.”[[68]](#endnote-68) The physical restraints are undeniable; unlimited economic growth is impossible. As the late economist Kenneth Boulding remarked, “Anyone who believes in indefinite growth in anything physical, on a physically finite planet, is either a madman or an economist.”[[69]](#endnote-69)

1. Human Nature in Neoliberal Thought

*“It is not the structure of the economy that is extended across society but the subject of economic thinking, its implicit anthropology…Neoliberalism is thus a ‘restoration’ not only of class power, of capitalism as the only possible economic system, it is a restoration of capitalism as synonymous with rationality.”[[70]](#endnote-70)*

As noted earlier, neoliberalism does not present an ideal, but reality, human nature. A nature fostered by market forces for the sole purpose of creating subjects for ongoing consumption to satisfy personal preferences. The consistent ordering of preferences to maximize personal welfare is considered the model for rational behavior. Thus the private interests of the self is the bedrock of human nature; rational behavior is the creation of a stable preference schemes to increase individual wellbeing.

Self-interest has been a mainstay of both classical and neoclassical economic theory. From the inception of liberalism, human nature was fashioned around the conception of the self-made individual; “…the individual as essentially the proprietor of his own person or capacities, owing nothing to society for them…the human essence is freedom from dependence on the will of others, and freedom is a function of *possession*.”[[71]](#endnote-71) Adam Smith, for example, focused on the human propensity to “barter, truck, and trade.” Although Smith championed self-interest, the neoliberal version is an extreme distortion of Smith’s economic agent. For Smith there was a world of value beyond the market, “…man ought to regard himself not as something separate and detached but as a citizen of the world, a member of the vast commonwealth of nature” and in directing his interest to “the great community, he ought *at all times* to be willing that his own little interest should be sacrificed.”[[72]](#endnote-72)

The traditional *Homo economicus* has undergone a radical transformation under neoliberalism; no longer merely an extrinsic partner in exchange. What distinguishes the neoliberal actor from the classical actor engaged in “barter, truck, and exchange” is described by Jason Read as a shift in anthropology; “What is more important for us is the way in which this shift in ‘anthropology’ from ‘Homo economicus’ as an exchanging creature to a competitive creature, or rather as a creature whose tendency to compete must be fostered, entails a general shift in the way in which human beings make themselves and are made subjects.”[[73]](#endnote-73) For the last four decades we have witnessed the transformation of human nature from a Smithian self, embedded in a “vast commonwealth of nature,” to an entrepreneur thoroughly responsible for investing in his or her own capital – “Competition for inward investment…is often seen…as the core doctrine of neoliberalism.”[[74]](#endnote-74) The individual is one “who can strategize for themselves among available options but play no role in determining those options—they are all free,”[[75]](#endnote-75) given prior to choice. This strategizing is guided by instrumental reason, which is merely a calculative process whose goal is not rational deliberation over ends since ends are already given through market forces like marketing.

So it would seem that once we define nature in the atomistic terms of classical mechanics there is a tendency consistent with theoretical completeness to apply the same measure to everything, humans included. Thus bending them into autonomous isolated particles that mysteriously blend through market transactions. This reductionism is responsible for creating a polity punctuated by solitary individuals engaged in constant and increasingly rapid transactions; detached from identity conferring public arrangements – like civic engagement – and locked in a competitive struggle for economic superiority and individual freedom. Where freedom is equated with calculations between alternative fashions of consumption and by implication label irrational the willingness to look out for the needs of others. At best we are, in the words of Thoreau, “Contracting [ourselves] into a nutshell of civility.”[[76]](#endnote-76)

The neoliberal subject appears in the world like Hobbesian mushrooms with no intrinsic connection to any object or end: “…consider men as if but even now sprung out of the earth, and suddenly, like mushrooms, come to full maturity, without all kind of engagement to each other.”[[77]](#endnote-77) This subject resembles the deracinated self of Kantian liberalism, since it is “…identifiable apart from and prior to the objects it seeks…To be a deontological self, I must be a subject whose identity is given independently of the things I have, independently, that is, of my interests and ends and my relation with others.” [[78]](#endnote-78) The neoliberal self is constituted as a one-dimensional consumer possessed with the faculty of instrumental reason with the freedom to choose among objects provided by market mechanisms, but having little influence on what is produced. Georgescu-Roegen’s portrayal captures this image well, “…the fiction of *homo oeconomicus*…strips man’s behavior of *every cultural propensity*, which is tantamount to saying that in his economic life *man acts mechanically*…The whole truth is that economics, in the way this discipline is generally professed, is mechanistic in the same strong sense in which we generally believe only Classical mechanics to be.”[[79]](#endnote-79)

We have already seen Daniel Kahneman and Vernon Smith demonstrate the inaccuracies of the current model of rational consumer behavior. Both argued that the historical conception of *Homo economicus* as a rational decision maker with well-ordered preferences and perfect information is not supported by empirical evidence.[[80]](#endnote-80) Others, like Richard A. Easterlin, have re-confirmed the ancient wisdom that money cannot buy happiness in the long run.[[81]](#endnote-81) Easterlin’s research convincingly demonstrates that happiness is not a matter of getting what we want – the bundle of consumables foisted on us by capitalisms’ treadmill of production – but more a matter of wanting what we get – the ability to rationally deliberate about the constitution of our choices and goals.

Pascal Bruckner characterizes the contemporary consumer as an, “…anthropological monstrosity…a kind of Sisyphus doomed to eternal dissatisfaction, repeating the process over and over…he sees only his material interest, to the detriment of his freedom and of the common concern.”[[82]](#endnote-82) To use the language of ecology, we could say that today’s consumer is both predator and prey, consuming their way to permanent dissatisfaction. Recent research in anthropology, evolutionary biology, behavioral economics, systems theory, quantum physics, and cognitive science make any claims to human nature based solely on self-interest and the maximization of individual welfare patently absurd and dangerous.[[83]](#endnote-83) The neoliberal model of humans as merely consumers and docile conformers to ends, which they have not chosen, but provided with the rational means to calculate their preferences in an orderly manner consistent over time to achieve those unchosen ends is preposterous as recent research compellingly demonstrates.

Unfortunately, one of the dangers alluded to above is already in an advanced stage in the United States, the erosion of democracy. Henry Giroux notes, “…neoliberalism wages an incessant attack on democracy, public goods, and noncommodified values. Under neoliberalism everything either is for sale or plundered for profit.”[[84]](#endnote-84) This includes citizenship! “The model neoliberal citizen is one who strategizes for her or himself among various social, political, and economic options, *not one who strives with others to alter or organize these options*.”[[85]](#endnote-85) Competition, not cooperation, becomes the driving force behind public associations, thus transforming the participants into private enterprises (“companies of one”) managed for individual gain. The citizen is transformed into a consumer, that is, an undemocratic citizen. As Wendy Brown explains, "Neoliberalism as a form of political reasoning that articulates the nature and meaning of the political, the social, and the subject must be underscored because it is through this form and articulation that its usurpation of other more democratic rationalities occurs.”[[86]](#endnote-86)

Few would deny that the “freedom” sought by neoliberals has little to do with democracy. Brown, discussing egalitarianism within a neoliberal schema, states: “…neoliberal political rationality features no intrinsic commitment to *political liberty*.”[[87]](#endnote-87) Brown continues, “Equality is not a value to be found anywhere in the neocon or neoliberal universe; to the contrary, egalitarianism is understood as a treacherous demagogic appeal, to which a property-owning and tax-paying population will, in time, become less vulnerable.”[[88]](#endnote-88) The dearth of political liberty in neoliberal thought has its origins in a core concept of capitalism, the division of labor. Both Thoreau and Marx were much concerned about the alienating effects on individuals caused by the mechanization of labor.

One of Marx’s central contributions to the critique of capitalism’s division of labor was the insight that nothing can be accomplished alone; labor is a collective and social process. Yet the same collective labor that creates the stuff to maximize our utility is *our* labor. But we cannot realize ourselves in it and thus it appears as something external and alien to us; something for which we are not individually responsible, like climate change. If through our labor we cannot identify with the product, then the only identifying feature of the commodity is its price, which further removes it from the social realm for too often the laborer is unable to purchase that which she created. Steven Vogel offers helpful comments on Marx’s division of labor as it is related to civic engagement, “…although all labor is implicitly social and cooperative, under capitalism it only appears in an individual and private form. Our social relations with each other appear as external to us, as a set of relations…not between people but between things.”[[89]](#endnote-89) And these “things,” like Hobbesian mushrooms, interact only in a competitive market arena.

Thoreau encountered a similar detachment when at the end of the Walden experiment he found no way to *simplify* the industrial economy based on division of labor. The economic system had no place for his “morning work” and certainly no need for someone engaged in the activity of “self-culture.” Thoreau had no skills that would advance the goals of the “Celestial Empire.” In that sense he was alienated. He traces the path to alienation in a Journal entry on September 1858, “If we follow the path taken by labour in its development from the handicraft via co-operation and manufacture to machine industry we can see a continuous trend towards greater rationalisation, the progressive elimination of the qualitative, human and individual attributes of the worker…What can be uglier than a country occupied by groveling, coarse, and low-lived men? No scenery will redeem it.”[[90]](#endnote-90) Smith was also acutely aware that without outside regulation workers, under the division of labor, would become, “…as stupid and ignorant as it is possible for a human creature to be.”[[91]](#endnote-91)

Closing Remarks

At this point the question we should ask ourselves is: “Will a commitment to the present institutional structure get us where we wish to be in the future?” If the current structure is committed to the belief that the future is understood in terms of the present (status quo), then we must respond with a resounding no: First, because there is no natural market or providential force (invisible hand) or spontaneous order coursing through human transactions; Second, unlimited growth is impossible for the reasons stated above – the unsustainability of material accumulation; and Third, the neoliberal theory of human nature has been repeatedly discredited by cognitive, natural, and social scientists.

Thomas Kuhn remarked that a paradigm ends when its metaphor has died. The machine metaphor embodied in neoliberal thought is theoretically dead; it has been for at least fifty years.[[92]](#endnote-92) Throughout this exhortation, we have demonstrated that the principles of neoliberalism are seriously flawed, unworkable and contradictory to ecological health. Yet we are not finished until we implement a new metaphor. Whatever it turns out to be: organic, deep ecology, sustainability, etc. it must reflect Thoreau’s unifying virtue of simplicity. The simplicity he advocated was not *simple*: recycling, high-bred cars, organic markets, composting, etc. These are all fine things, but they rarely get to the source of the problems – in fact many are proposed as solutions by the architects of the problems. Thoreau’s simplicity was deeply moral and founded on the concept of self-improvement: “…the object of life is something else than acquiring property… [but] trying to better his conditions in a higher sense…trying to invent something, to be somebody, -- i.e., to invent and get a patent for oneself.”[[93]](#endnote-93) Although Thoreau’s “morning work” is unlikely to be completed it can be advanced: “Every man is tasked to make his life, even in its details, worthy of the contemplation of his most elevated and critical hour.”[[94]](#endnote-94)

 Do we want to reach that point where resignation to market forces proclaims that it is too late to change (“too large to fail”); we can go that way, we have done so before? As Martin Luther King lamented, “In this unfolding conundrum of life and history there is such a thing as being too late…Over the bleached bones, and jumbled residue of numerous civilizations are written the pathetic words: ‘Too late’.”[[95]](#endnote-95)

Endnotes

1. *Walden* 8. [↑](#endnote-ref-1)
2. Ibid6. [↑](#endnote-ref-2)
3. Ibid83 – 84. [↑](#endnote-ref-3)
4. The term coined by John Ruskin to describe the poverty of wealth. John Ruskin, *Unto the Last* (1860), “the Veins of Wealth.” [↑](#endnote-ref-4)
5. Philip Cafaro, *Thoreau’s Living Ethic:* Walden *and the Pursuit of Virtue* (Athens, GA: University of Georgia Press, 2004) 81. [↑](#endnote-ref-5)
6. *Walden*, 12. [↑](#endnote-ref-6)
7. Ibid*,* 6. [↑](#endnote-ref-7)
8. Ibid, 47 – 48. [↑](#endnote-ref-8)
9. James Reid, “Speaking Extravagantly,” in *Thoreau’s Importance for Philosophy*, edited by Rick Furtak, Jonathan Ellsworth, and James Reid (New York: Fordham University Press, 2012) 44. [↑](#endnote-ref-9)
10. (*Theses on Feuerbach*, XI) [↑](#endnote-ref-10)
11. Economic liberalism is characterized by deregulated markets, privatization of public enterprises, liberalization of trade, generous tax cuts, elimination of collective bargaining, and shrinking government. For a clear and concise introduction to neoliberalism See Manfred Steger’s *Globalization: A Very Short History* (New York: Oxford University Press, 2009) 42. [↑](#endnote-ref-11)
12. Sustainability or any of its cognates commands a range of meanings, some of which are incompatible. There are as many definitions as needed to support a point of view. Fifteen years ago, J. Pezzey remarked, “I see little point in expanding the collection of fifty sustainability definitions which I made in 1989, to five thousand definitions one could readily find today.” See “Sustainability Constraints Versus ‘Optimality’ Versus Intertemporal Concern, and Axioms Versus Data,” *Land Economics* vol. 73 (4) (1997) 448 – 466. [↑](#endnote-ref-12)
13. See Jeremy B. Williams & Judith M. McNeil, “The Current Crisis in Neoclassical Economics and the Case for an Economic Analysis based on Sustainable Development,” U21Global – Working Paper, March 2005: <http://www.u21global.edu.sg>. [↑](#endnote-ref-13)
14. *Walden* 33 – 34. [↑](#endnote-ref-14)
15. Herman Daly and John Cobb, *For the Common Good: Redirecting the Economy toward Community, the Environment, and a Sustainable Future* (Boston: Beacon Press, 1989); John Gowdy, Lisi Krall, and Yunzhong Chen, “The Parable of the Bees: Beyond Proximate Causes in Ecosystem Service Valuation,” *Environmental Ethics* vol. 35, spring 2013, 41 – 55. Quote on page 49. [↑](#endnote-ref-15)
16. Clive Hamilton, *Growth Fetish* (London, UK: Pluto Press, 2004) 10 – 11. [↑](#endnote-ref-16)
17. Jerome Roos, 10/23/2011, http://roarmag.org/2011/10/the-year-2011-marks-the-end-of-the-end-of-history/ [↑](#endnote-ref-17)
18. Francis Fukuyama, “The End of History?” *The National Interest*, summer 1989. Available at <http://www.wesjones.com/eoh.htm>. To his credit Fukuyama has retracted his initial thesis admitting that China’s political experiment could count as a counter-ideology. *Financial Times*, January 17th, 2011, http://www.ft.com.cms/s/0/cb6af6e8-2272-11e0-b6a2-0014feab49a.html. [↑](#endnote-ref-18)
19. Clive Hamilton’s *Growth Fetish*, (London: Pluto Press, 2004) 19 and 101. [↑](#endnote-ref-19)
20. Francis Fukuyama, “The End of History,” Fukuyama did not applaud the end of history, but offered a surprisingly accurate prediction of our current situation in history, see *The End of History and the Last Man* (The Free Press, 1992) xi – xii. For opposing positions see, William Ophul: “Our cultural myth to the contrary notwithstanding, this way of life represents not the final progressing advance of civilization to the ‘end of history’ but an intensification of civilization’s inherent flaws that can only end in tragedy.” *Plato’s Revenge: Politics in the Age of Ecology* (Cambridge, MA: MIT Press, 2011) 8. John Bellamy Foster warns against accepting Fukuyama’s “non-future” as we confront the global ecological crisis, “...we must guard against…this notion that history has in some way reached its end or that there are no genuine alternatives.” *The Vulnerable Planet: a short economic history of the environment* (New York: Monthly Review Press, 1999) 148. [↑](#endnote-ref-20)
21. From Baku (Azerbaijan) where oil production produces life-threatening air-pollution, to Niamey (Niger) where life expectancy is 35 – 40 and 1 in 4 children die before the age of 5 from polluted water sources, to Cubatao Valley (Brazil) where every third person has respiratory disease, to “cancer alley” along the Mississippi (USA), from Baton Rouge to New Orleans, where toxic industrial accidents and releases are linked to one of the highest incidences of cancer in the USA…and what of Linfen (China), Dakar (Senegal), La Oroya (Peru), Kabwe (Zambia), all victims of industrial pollution so severe as to warrant repeated health alerts. See [www.popsci.com/environment/2008-06/worlds-10-dirtiest-cities](http://www.popsci.com/environment/2008-06/worlds-10-dirtiest-cities) and [www.visionproject.org](http://www.visionproject.org). [↑](#endnote-ref-21)
22. For an excellent account of this process see “Losing Faith in Progress: Capitalist Patriarchy as an ‘Alchemical System,’ ” Claudia von Werlhof, in *There is an Alternative: Subsistence and Worldwide Resistance to Corporate Globalization*, Veronika Bennholdt-Thomsen, et al. (London: Zed Books, 2001) 15 – 40. For a chilling account of commodification as a world view see Margaret Jane Radin, *Contested Commodities: the trouble with trade in sex, children, body parts, and other things* (Cambridge, MA: Harvard University Press, 1996). Radin sees universal commodification as a stripping away of humanity, “The simplest version of universal commodification tends to presume that individual value is equivalent with exchange value…and freedom is defined as free trade of all things.” 3. William Robinson depicts the project of universal commodification as a “…tearing down all non-market structures that, in the past, placed limits on accumulation – and dictatorship – of capital. Every corner of the globe, every nook and cranny of social life is becoming modified.” “Globalization: nine theses on our epoch,” *Race & Class*, vol. 38 (2) 1996. [↑](#endnote-ref-22)
23. Neoliberalism: The economic model: origins, theory, definition.” [www.dandelionsaladwordpress.com/2007/12/01/neoliberalism](http://www.dandelionsaladwordpress.com/2007/12/01/neoliberalism). [↑](#endnote-ref-23)
24. Henry Grioux, *The Terror of Neoliberalism: Authoritarianism and the Eclipse of Democracy* (Boulder, CO: Paradigm Publishers, 2004) xxii. [italics added] [↑](#endnote-ref-24)
25. Fredric Jameson, *Postmodernism; Or, the Cultural Logic of Late Capitalism* (Durham, NC: Duke University Press, 1991) 263 [italics added]: Cited in Jason Read, “A Genealogy of Homo-Economicus: Neoliberalism and the Production of Subjectivity,” *Foucault Studies*, no. 6, February 2009, 26. [Italics added] [↑](#endnote-ref-25)
26. The work of Philip Mirowski is relevant here. See *More Heat than Light: Economics as Social Physics, Physics as Nature’s Economy* (New York: Cambridge University Press, 1989) and “The Thirteeen Commandments of Neoliberalism,” the Utopian, June 19th, 2013 at www.the-utopian.org/post/…/the-thirteen-commandments-of-neoliberalism. [↑](#endnote-ref-26)
27. Ronald Coase, quoted in Robert Bradley’s “Ronald Coase and Business Firms (Part 1: Why are there firms?) <http://www.masterresource.org/2013/09/ronald-coase-i-why-firms/>. [↑](#endnote-ref-27)
28. Steven Stoll, *The Great Delusion: A Mad Inventor, Death in the Tropics, and the Utopian Origins of Economic Growth* (New York: Hill and Wang, 2008) 150. [↑](#endnote-ref-28)
29. Robert Nadeau, “Neoclassical Economic Theory,” Encyclopedia of Earth, <http://www.eoearth.org/view/article/154813/> . [↑](#endnote-ref-29)
30. Karl Polyani, *The Great Transformation: The Political and Economic Origins of Our Time* (Boston, MA: Beacon Press, 1944) 125. [Italics original] [↑](#endnote-ref-30)
31. Daniel W. Bromley, “Searching for sustainability: The poverty of spontaneous order,” *Ecological Economics*, vol. 24 (2 & 3) 1998, 233. [↑](#endnote-ref-31)
32. Robert Solow, “Economic History and Economics,” *The American Economic Review*, vol. 75 (2) (May 1985) 328 – 331. Also, see Paul Craig Roberts, “The Free Market Fetish,” *Counterpunch*, February 2010, 5 – 7. [www.counterpunch.org/Roberts02052010/html](http://www.counterpunch.org/Roberts02052010/html). [↑](#endnote-ref-32)
33. <http://www.brainyquote.com/quotes/authors/m/milton_friedman.html> [Italics added] [↑](#endnote-ref-33)
34. Marcel Mauss, *The Gift: Forms and Functions of Exchange in Archaic Societies* (New York: W. W. Norton & Company, 1967) 3. [↑](#endnote-ref-34)
35. Karl Polyani, *The Great Transformation*, 45 and 139. [Italics original]. [↑](#endnote-ref-35)
36. For example see “Growth Isn’t Possible,” <http://www.iadb.org/intal/intalcdi/PE/2011/08961.pdf>. [↑](#endnote-ref-36)
37. Claudia von Werlhof, “The Globalization of Neoliberalism: Its Consequences, and Some of Its Basic Alternatives,” *Capitalism Nature Socialism*, vol. 19 (3) September 2008, 94 [Italics added]. [↑](#endnote-ref-37)
38. Juliet B. Schor, *Plenitude: the new economics of true wealth* (New York; Penguin Press, 2010) 161. [↑](#endnote-ref-38)
39. Bernard Mandeville, *The Grumbling Hive*, <http://Andromeda.rutgers.edu/~Lynch/Texts/hive.html>. [↑](#endnote-ref-39)
40. John Boli, “The History of the Invisible Hand of the Market and Homo Economicus,” 26, in *Economics of Good and Evil*, editor Tomas Sedlacek (New York: Oxford University Press, 2011) [↑](#endnote-ref-40)
41. <http://www.investorwords.com/2633/invisible_hand.html#ixzz2MmsplTZv>. For Stigliz government has a role “….in banking and securities regulation, and a host of other areas: some regulation is required to make markets work.” [↑](#endnote-ref-41)
42. Ibid. [Italics original] [↑](#endnote-ref-42)
43. Markets are said to fail when the real cost of an item is not reflected in its price. “An externality occurs when production or consumption by one party directly affects the welfare of another party, where ‘directly’ means that the effect is unpriced (it is *external* to the market). *The End of Growth: Adapting to Our New Economic Reality*, Richard Heinberg (Gabriola Island: Canada: New Society Publishers, 2011) 40 – 41. [↑](#endnote-ref-43)
44. It is doubtful that Smith, himself, attributed such properties to the invisible hand. See Emma Rothschild, “Adam Smith and the Invisible Hand,” *American Economic Review*, vol. 84 (2), May 1994, 319 – 322. [↑](#endnote-ref-44)
45. Thomas Kuhn, *The Structure of Scientific Revolutions*, 2nd edition enlarged (Chicago: University of Chicago Press, 1970) 52 – 76. [↑](#endnote-ref-45)
46. Joseph Stiglitz, “There is no invisible hand,” *The Guardian*, Friday, December 20th, 2002. <http://www.theguardian.com/education/2002/dec/20/highereducation.uk1>. [↑](#endnote-ref-46)
47. “A Brief History of the Post-Autistic Economics Movement,” [http://www.paecon.net/HistoryPAE.htm 1](http://www.paecon.net/HistoryPAE.htm%201). [↑](#endnote-ref-47)
48. Georgescu-Roegen, “Nicholas Georgescu-Roegen about Himself,” in *Eminent Economists: Their Life Philosophies,* edited by Michael Szenberg (New York: Cambridge University Press, 1992) 130. Georgescu-Roegen, *The Entropy Law and the Economic Process* (Cambridge, MA: Harvard University Press, 1971) 223. [↑](#endnote-ref-48)
49. Gowdy et al. “What Every Conservation Biologist Should Know about Economic Theory,” *Conservation Biology*, vol. 24 (6) 2010, 1440 –1447. Quote on page 1441. [↑](#endnote-ref-49)
50. John Stuart Mill, *Principles of Political Economy with some applications to social philosophy*, Book II, chapter 1, “Of Property.” [↑](#endnote-ref-50)
51. Lawrence Summers one-time president of Harvard University and the World Bank, and economic advisor to the Obama administration, as cited in Patrick Curry, *Ecological Ethics: An Introduction*, 2nd edition (Cambridge: UK Polity Press, 2011) 231[Italics added]. [↑](#endnote-ref-51)
52. Robert Solow as cited in “Nicholas Georgescu-Roegen about Himself,” 149. [↑](#endnote-ref-52)
53. Robert Solow, “The economics of resources and the resources of economics,” *American Economic Review*, May 1974, 1 – 14. Quote on 11. [↑](#endnote-ref-53)
54. John Stuart Mill, *The Principles of Political Economy*, book 1, chapter 6, “On Circulating and Fixed Capital.” [↑](#endnote-ref-54)
55. Jeremy Williams and Judith McNeill, “The Current Crisis in Neoclassical Economics and the Case for an Economic Analysis based on Sustainable Development.” [↑](#endnote-ref-55)
56. *The End of Growth*, 36. [italics original] For a comprehensive history of the transition from classical to neoclassical economics, see Paul P. Christensen, “Historical Roots for Ecological Economics—Biophysical Versus Allocative Approaches,” *Ecological Economics* 1 (February 1989) 17 – 36. [↑](#endnote-ref-56)
57. See Herman Daly and Kenneth Townsend, editors *Valuing the Earth: Economics, Ecology, Ethics* (Cambridge, MA: MIT Press, 1993). [↑](#endnote-ref-57)
58. See Neumayer *Weak versus Strong Sustainability* 4th edition; Bryan Norton, “The Ignorance Argument: What Must We Know to be Fair to the Future?” in *Economics, Ethics, and Environmental Policy: Contested Choices*, edited by Daniel Bromley and J. Paavola (Oxford, UK: Blackwell Publishing Ltd., 2002) 35 – 52. For Georgescu-Roegen see Herman Daly’s “Georgescu-Roegen versus Solow/Stiglitz,” Ecological Economics, vol. 22 (1997) 263. [↑](#endnote-ref-58)
59. There is a vast literature on the methodology of ‘contingent valuation’ (shadow pricing). A search through the publication index of the *International Society of Ecological Economics* yields a wide range of articles on the topic. [↑](#endnote-ref-59)
60. *Walden*, 149 [↑](#endnote-ref-60)
61. Robert Solow, “Sustainability: an economist’s perspective,” in *Economics of the Environment*, edited by R. Dorfman and N. Dorfman (New York: Norton, 1994) 179 – 187. [↑](#endnote-ref-61)
62. Herman Daly, “Georgescu-Roegen versus Solow/Stiglitz,” *Ecological Economics*, vol. 22 (1997) 261. [↑](#endnote-ref-62)
63. Daniel Bromley, “Searching for sustainability: The poverty of spontaneous order,” 232. [↑](#endnote-ref-63)
64. A recent case study describes the disastrous results of applying the logic of substitution. Robert Ayres, Jeroen C.J.M. van den Bergh, and John Gowdy, “Viewpoint: Weak Versus Strong Sustainabilty,” *Ideas* <http://ideas.repec.org/p/dgr/uvatin/19980103.html>. [↑](#endnote-ref-64)
65. Herman Daly, “Sustainable Growth: An Impossibility Theorem,” in Herman Daly & Kenneth Townsend, editors *Valuing the Earth: Economics, Ecology, Ethics* (Cambridge, MA: MIT Press, 1993) 267. [↑](#endnote-ref-65)
66. This is a simplification of the work from two of the founders of Ecological Economics, Nicholas Georgescu-Roegen and Herman Daly. They argue that all economic transactions are subject to the 2nd law of thermodynamics (entropy). Thus what economic production does is move energy from one state where it can be used to produce work (low entropy) to a state where it is no longer usable (high entropy). They contend, rightly I think, that treating nature as a subset of the economy, as neoliberals do using the myth of substitution, will not lead to continuous growth but rather to ecological collapse; since the production of waste will undermine natural systems ability to assimilate it. [↑](#endnote-ref-66)
67. Richard Heinberg, *The End of Growth: Adapting to Our New Economic Reality* (New Society Publishers, 2011) 40. [↑](#endnote-ref-67)
68. Jerry Mander, *The Capitalist Papers: Fatal Flaws of an Obsolete System* (Berkeley, CA: Counterpoint, 2012) 81. [↑](#endnote-ref-68)
69. Kenneth Boulding, <https://www.goodreads.com/quotes/399387-anyone-who-believes-in-indefinite-growth-in-anything-physical-on-a-finite-planet>. [↑](#endnote-ref-69)
70. Jason Read, “A Genealogy of Homo Economicus: Neoliberalism and the Production of Subjectivity,” *Foucault Studies*, No 6, February 2009, 25 – 36. Quote on page 32. [↑](#endnote-ref-70)
71. C.B. Macpherson, *The Political Theory of Possessive Individualism: Hobbes to Locke* (New York: Oxford University Press, 1962) 3. [italics added] [↑](#endnote-ref-71)
72. Adam Smith, *The Theory of Moral Sentiments*, 140. As cited in Amartya Sen, *On Ethics & Economics* (Oxford, England: Blackwell Publishing, 1988) 22 – 23 [Italics added] [↑](#endnote-ref-72)
73. Jason Read, “A Genealogy of Homo Economicus,” 28. [↑](#endnote-ref-73)
74. Neoliberalism: The economic model: origins, theory, definition.” [www.dandelionsaladwordpress.com/2007/12/01/neoliberalism](http://www.dandelionsaladwordpress.com/2007/12/01/neoliberalism) (accessed 12/15/2013). [↑](#endnote-ref-74)
75. Trent Hamann, “Neoliberalism, Governmentality, and Ethics,” *Foucault Studies*, no. 6 (February 2009) 37 – 59. Quote on page 51. [↑](#endnote-ref-75)
76. *Walden* 5 [↑](#endnote-ref-76)
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78. Michael Sandel, *Liberalism and the Limits of Justice* (New York: Cambridge University Press, 1982) 7 and 55. [↑](#endnote-ref-78)
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