

The Paradox of Wealth: Capitalism and Ecological Destruction

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The core argument on the paradox of wealth here was first introduced in a paper by both authors, entitled “Marx’s Ecology in the Twenty-First Century,” presented by Clark at the International Symposium on Ecological Civilization, Sanya, Hainan, China, June 23, 2009. Subsequent versions were delivered by Foster at the Marxism 2009 conference, University of London, July 4, 2009, and the Political Economy of the World-System Miniconference, University of San Francisco, August 7, 2009.

— The Editors

Today orthodox economics is reputedly being harnessed to an entirely new end: saving the planet from the ecological destruction wrought by capitalist expansion. It promises to accomplish this through the further expansion of capitalism itself, cleared of its excesses and excrescences. A growing army of self-styled “sustainable developers” argues that there is no contradiction between the unlimited accumulation of capital — the credo of economic liberalism from Adam Smith to the present — and the preservation of the earth. The system can continue to expand by creating a new “sustainable capitalism,” bringing the efficiency of the market to bear on nature and its reproduction. In reality, these visions amount to little more than a renewed strategy for profiting on planetary destruction.

Behind this tragedy-cum-farce is a distorted accounting deeply rooted in the workings of the system that sees wealth entirely in terms of value generated through exchange. In such a system, only commodities for sale on the market

really count. External nature — water, air, living species — outside this system of exchange is viewed as a “free gift.” Once such blinders have been put on, it is possible to speak, as the leading U.S. climate economist William Nordhaus has, of the relatively unhindered growth of the economy a century or so from now, under conditions of business as usual — despite the fact that leading climate scientists see following the identical path over the same time span as absolutely catastrophic both for human civilization and life on the planet as a whole.

Such widely disparate predictions from mainstream economists and natural scientists are due to the fact that, in the normal reckoning of the capitalist system, both nature’s contribution to wealth and the destruction of natural conditions are largely invisible. Insulated in their cocoon, orthodox economists either implicitly deny the existence of nature altogether or assume that it can be completely subordinated to narrow, acquisitive ends.

This fatal flaw of received economics can be traced back to its conceptual foundations. The rise of neoclassical economics in the late nineteenth and early twentieth centuries is commonly associated with the rejection of the labor theory of value of classical political economy and its replacement by notions of marginal utility/productivity. What is seldom recognized, however, is that another critical perspective was abandoned at the same time: the distinction between wealth and value (use value and exchange value). With this was lost the possibility of a broader ecological and social conception of wealth. These blinders of orthodox economics, shutting out the larger natural and human world, were challenged by figures inhabiting what John Maynard Keynes called the “underworlds” of economics. This included critics such as James Maitland (Earl of Lauderdale), Karl Marx, Henry George, Thorstein Veblen, and Frederick Soddy. Today, in a time of unlimited environmental destruction, such heterodox views are having a comeback.

The Lauderdale Paradox

The ecological contradictions of the prevailing economic ideology are best explained in terms of what is known in the history of economics as the “Lauderdale Paradox.” James Maitland, the eighth Earl of Lauderdale (1759-1839), was the author of *An Inquiry into the Nature and Origin of Public Wealth and into the Means and Causes of its Increase* (1804). In the paradox with which his name came to be associated, Lauderdale argued that there was an inverse correlation between public wealth and private riches such that an increase in

the latter often served to diminish the former. "Public wealth," he wrote, "may be accurately defined, – *to consist of all that man desires, as useful or delightful to him.*" Such goods have use value and thus constitute wealth. But private riches, as opposed to wealth, required something additional (i.e., had an added limitation), consisting "*of all that man desires as useful or delightful to him; which exists in a degree of scarcity.*"

Scarcity, in other words, is a necessary requirement for something to have value in exchange, and to augment private riches. But this is not the case for public wealth, which encompasses all value in use, and thus includes not only what is scarce but also what is abundant. This paradox led Lauderdale to argue that increases in scarcity in such formerly abundant but necessary elements of life as air, water, and food would, if exchange values were then attached to them, enhance individual private riches, and indeed the riches of the country – conceived of as "the sum-total of individual riches" – but only at the expense of the common wealth. For example, if one could monopolize water that had previously been freely available by placing a fee on wells, the measured riches of the nation would be increased at the expense of the growing thirst of the population.

"The common sense of mankind," Lauderdale contended, "would revolt" at any proposal to augment private riches "by creating a scarcity of any commodity generally useful and necessary to man." Nevertheless, he was aware that the bourgeois society in which he lived was already, in many ways, doing something of the very sort. He explained that, in particularly fertile periods, Dutch colonialists burned "spiceries" or paid natives to "collect the young blossoms or green leaves of the nutmeg trees" to kill them off; and that in plentiful years "the tobacco-planters in Virginia," by legal enactment, burned "a certain proportion of tobacco" for every slave working their fields. Such practices were designed to increase scarcity, augmenting private riches (and the wealth of a few) by destroying what constituted public wealth – in this case, the produce of the earth. "So truly is this principle understood by those whose interest leads them to take advantage of it," Lauderdale wrote, "that nothing but the impossibility of general combination protects the public wealth against the rapacity of private avarice."

From the beginning, wealth, as opposed to mere riches, was associated in classical political economy with what John Locke called "intrinsic value," and what later political economists were to call "use value."⁴ Material use values had, of course, always existed, and were the basis of human existence. But commodities produced for sale on the market under capitalism also

embodied something else: exchange value (value). Every commodity was thus viewed as having “a twofold aspect,” consisting of use value and exchange value.⁵ The Lauderdale Paradox was nothing but an expression of this twofold aspect of wealth/value, which generated the contradiction between total public wealth (the sum of use values) and the aggregation of private riches (the sum of exchange values).

David Ricardo, the greatest of the classical-liberal political economists, responded to Lauderdale’s paradox by underscoring the importance of keeping wealth and value (use value and exchange value) conceptually distinct. In line with Lauderdale, Ricardo stressed that if water, or some other natural resource formerly freely available, acquired an exchange value due to the growth of absolute scarcity, there would be “an actual loss of wealth” reflecting the loss of natural use values – even with an increase of private riches.

In contrast, Adam Smith’s leading French follower, Jean Baptiste Say, who was to be one of the precursors of neoclassical economics, responded to the Lauderdale Paradox by simply defining it away. He argued that wealth (use value) should be subsumed under value (exchange value), effectively obliterating the former. In his *Letters to Malthus on Political Economy and Stagnation of Commerce* (1821), Say thus objected to “the definition of which Lord Lauderdale gives of *wealth*.” It was absolutely essential, in Say’s view, to abandon altogether the identification of wealth with use value. As he wrote:

Adam Smith, immediately having observed that there are two sorts of values, one *value in use*, the other *value in exchange*, completely abandons the first, and entirely occupies himself all the way through his book with *exchangeable value* only. This is what you yourself have done, Sir [addressing Malthus]; what Mr. Ricardo has done; what I have done; what we have all done: for this reason that there is no other value in political economy....[Consequently,] wealth consists in the value of the things we possess; confining this word *value* to the only admitted and exchangeable value.

Say did not deny that there were “things indeed which are natural wealth, very precious to man, but which are not of that kind about which political economy can be employed.” But political economy was to encompass in its concept of value – which was to displace altogether the concept of wealth – nothing but exchangeable value. Natural or public wealth, as opposed to value in exchange, was to be left out of account.

Nowhere in liberal political economy did the Lauderdale Paradox create more convolutions than in what Marx called the “shallow syncretism” of John

Stuart Mill. Mill's *Principles of Political Economy* (1848) almost seemed to collapse at the outset on this basis alone. In the "Preliminary Remarks" to his book, Mill declared (after Say) that, "wealth, then, may be defined, [as] all useful or agreeable things which possess exchangeable value" – thereby essentially reducing wealth to exchange value. But Mill's characteristic eclecticism and his classical roots led him also to expose the larger irrationality of this, undermining his own argument. Thus, we find in the same section a penetrating treatment of the Lauderdale Paradox, pointing to the conflict between capital accumulation and the wealth of the commons. According to Mill:

Things for which nothing could be obtained in exchange, however useful or necessary they may be, are not wealth in the sense in which the term is used in Political Economy. Air, for example, though the most absolute of necessities, bears no price in the market, because it can be obtained gratuitously: to accumulate a stock of it would yield no profit or advantage to any one; and the laws of its production and distribution are the subject of a very different study from Political Economy. But though air is not wealth, mankind are much richer by obtaining it gratis, since the time and labour which would otherwise be required for supplying the most pressing of all wants, can be devoted to other purposes. It is possible to imagine circumstances in which air would be a part of wealth. If it became customary to sojourn long in places where the air does not naturally penetrate, as in diving-bells sunk in the sea, a supply of air artificially furnished would, like water conveyed into houses, bear a price: and if from any revolution in nature the atmosphere became too scanty for the consumption, or could be monopolized, air might acquire a very high marketable value. In such a case, the possession of it, beyond his own wants, would be, to its owner, wealth; and the general wealth of mankind might at first sight appear to be increased, by what would be so great a calamity to them. The error would lie in not considering, that however rich the possessor of air might become at the expense of the rest of the community, all persons else would be poorer by all that they were compelled to pay for what they had before obtained without payment.

Mill signaled here, in line with Lauderdale, the possibility of a vast rift in capitalist economies between the narrow pursuit of private riches on an increasingly monopolistic basis, and the public wealth of society and the commons. Yet, despite these deep insights, Mill closed off the discussion with these "Preliminary Remarks," rejecting the Lauderdale Paradox in the end, by defining wealth simply as exchangeable value. What Say said with respect to Smith in the *Wealth of Nations* – that he entirely occupied "himself all the way through his book [after his initial definitions] with exchangeable value

only" — therefore applied also to Mill in his *Principles of Political Economy*. Nature was not to be treated as wealth but as something offered "gratis," i.e., as a free gift from the standpoint of capitalist value calculation.

Marx and the Lauderdale Paradox

In opposition to Say and Mill, Marx, like Ricardo, not only held fast to the Lauderdale Paradox but also made it his own, insisting that the contradictions between use value and exchange value, wealth and value, were intrinsic to capitalist production. In *The Poverty of Philosophy*, he responded to Proudhon's confused treatment (in *The Philosophy of Poverty*) of the opposition between use value and exchange value by pointing out that this contradiction had been explained most dramatically by Lauderdale, who had "founded his system on the inverse ratio of the two kinds of value." Indeed, Marx built his entire critique of political economy in large part around the contradiction between use value and exchange value, indicating that this was one of the key components of his argument in *Capital*. Under capitalism, he insisted, nature was rapaciously mined for the sake of exchange value: "the earth is the reservoir, from whose bowels the use-values are to be torn."

This stance was closely related to Marx's attempt to look at the capitalist economy simultaneously in terms of its economic-value relations, and its material transformations of nature. Thus, Marx was the first major economist to incorporate the new notions of energy and entropy, emanating from the first and second laws of thermodynamics, into his analysis of production.¹² This can be seen in his treatment of the metabolic rift — the destruction of the metabolism between human beings and the soil, brought on by the shipment of food and fiber to the city, where nutrients withdrawn from the soil, instead of returning to the earth, ended up polluting the air and the water. In this conception, both nature and labor were robbed, since both were deprived of conditions vital for their reproduction: not "fresh air" and water but "polluted" air and water, Marx argued, had become the mode of existence of the worker.¹³

Marx's analysis of the destruction of the wealth of nature for the sake of accumulation is most evident in his treatment of capitalist ground rent and its relation to industrial agriculture. Ricardo had rooted his agricultural rent theory in "the original and indestructible powers of the soil"; Marx replied that "the soil has no 'indestructible powers'" — in the sense that it could be

degraded, i.e., subject to conditions of ecological destruction. It is here in Marx's treatment of capitalist agriculture that the analysis of the metabolic rift and the Lauderdale Paradox are brought together within his overall critique. It is here, too, that he frequently refers to sustainability as a material requirement for any future society – the need to protect the earth for “successive generations.” A condition of sustainability, he insisted, is the recognition that no one (not even an entire society or all societies put together) owns the earth – which must be preserved for future generations in accordance with the principles of good household management. For a sustainable relation between humanity and the earth to be possible under modern conditions, the metabolic relation between human beings and nature needs to be rationally regulated by the associated producers in line with their needs *and* those of future generations. This means that the vital conditions of life and the energy involved in such processes need to be conserved.

Few things were more important, in Marx's view, than the abolition of the big private monopolies in land that divorced the majority of humanity from: (1) a direct relation to nature, (2) the land as a means of production, and (3) a communal relation to the earth. Thus, he delighted in quoting at length from Herbert Spencer's chapter in his *Social Statics* (1851), “The Right to the Use of the Earth.” There, Spencer openly declared: “Equity...does not permit property in land, or the rest would live on the earth by sufferance only....It is impossible to discover any mode in which land can become private property....A claim to the exclusive possession of the soil involves land-owning despotism.” Land, Spencer insisted, properly belongs to “the great corporate body – society.” Human beings were “co-heirs” to the earth.

Although Marx usually looked at nature from an exclusively human perspective, in terms of sustaining use values, he also referred at times to nature's right not to be reduced to a mere commodity. Thus, he quoted Thomas Müntzer's famous objection that, in the developing bourgeois society, “all creatures have been made into property, the fish in the water, the birds in the air, the plants on the earth – all living things must also become free.”

Ecology and the Labor Theory of Value

Ironically, green thinkers (both non-socialist and socialist) frequently charge that the labor theory of value, to which Marx adhered in his critique of capitalism, put him in direct opposition to the kind of ecologically informed value analysis that is needed today. In *Small Is Beautiful*, E. F. Schumacher observed that, in modern society, there is an inclination “to treat as valueless everything that we have not made ourselves. Even the great Dr. Marx fell into this devastating error when he formulated the so-called ‘labour theory of value.’” Luiz Barbosa, a contributor to a recent environmental sociology collection, has written that Marx “believed raw materials are given to us gratis (for free) by nature and that it is human labor that gives it value. Thus, Marx failed to notice the intrinsic value of nature.” Eco-socialist Jean-Paul Deléage has complained that, in making labor the only source of value, Marx “attributes no intrinsic value to natural resources.” Social ecologist Matthew Humphrey gives credence to the view that “Marx’s attachment to the labour theory of value in which non-human nature is perceived as valueless” can be taken as an indication of “his anthropocentric outlook.”

Here, it is important to understand that certain conceptual categories that Marx uses in his critique of political economy, such as nature as a “free gift” and the labor theory of value itself, were inventions of classical-liberal political economy that were integrated into Marx’s *critique* of classical political economy – insofar as they exhibited the real tendencies and contradictions of the system. Marx employed these concepts in an argument aimed at transcending bourgeois society and its limited social categories. The idea that nature was a “free gift” for exploitation was explicitly advanced by the physiocrats, and by Adam Smith, Thomas Malthus, David Ricardo, and John Stuart Mill – well before Marx.¹⁸ Moreover, it has been perpetuated in mainstream economics long after Marx. Although accepting it as a reality of bourgeois political economy, Marx was nevertheless well aware of the social and ecological contradictions imbedded in such a view. Thus, in his *Economic Manuscripts of 1861-63*, he repeatedly attacked Malthus for falling back on this “physiocratic notion” of the environment as “a gift of nature to man,” while failing to recognize that the concrete appropriation of nature for production – and the entire value framework built upon this in capitalist society – was, in fact, associated with historically specific social relations.¹⁹ For Marx, with his emphasis on the need to protect the earth for future generations, the capitalist expropriation of the environment as a free object simply pointed to

the contradiction between natural wealth and a system of accumulation of capital that systematically “robbed” it.

Nevertheless, since the treatment of nature as a “free gift” was intrinsic to the workings of the capitalist economy, it continued to be included as a *basic proposition underlying neoclassical economics*. It was repeated as an axiom in the work of the great late-nineteenth-century neoclassical economist Alfred Marshall, and has continued to be advanced in orthodox economic textbooks. Hence, the tenth edition (1987) of a widely used introductory textbook in economics by Campbell McConnell states the following: “Land refers to all natural resources — all ‘free gifts of nature’ — which are useable in the production process.” And farther along in the same book we find: “Land has no production cost; it is a ‘free and nonreproducible gift of nature.’”²⁰ Indeed, so crucial is this notion to neoclassical economics that it continues to live on in mainstream environmental economics. For example, Nick Hanley, Jason F. Shogren, and Ben White state in their influential *Introduction to Environmental Economics* (2001) that “natural capital comprises all [free] gifts of nature.”²¹

Green critics, with only the dimmest knowledge of classical political economy (or of neoclassical economics), often focus negatively on Marx’s adherence to the labor theory of value — the notion that only labor generated value. Yet it is important to remember that the labor theory of value was not confined to Marx’s critique of political economy but constituted the *entire basis* of classical-liberal political economy. Misconceptions pointing to the anti-ecological nature of the labor theory of value arise due to conflation of the categories of *value* and *wealth* — since, in today’s received economics, these are treated synonymously. It was none other than the Lauderdale Paradox, as we have seen, that led Say, Mill, and others to abandon the autonomous category of wealth (use value) — helping to set the stage for the neoclassical economic tradition that was to follow. In the capitalist logic, there was no question that nature was valueless (i.e., a free gift). The problem, rather, was how to jettison the concept of wealth, as distinct from value, from the core framework of economics, since it provided the basis of a critical — and what we would now call “ecological” — outlook.

Marx, as noted, strongly resisted the jettisoning of the wealth-value distinction, going so far as to criticize other socialists if they embraced the “value equals wealth” misconception. If human labor were one source of wealth, he argued — one that became the basis of value under capitalism — nature was another indispensable source of wealth. Those who — falling prey to the commodity fetishism of capitalist value analysis — saw labor as the

sole source of wealth were thus attributing “supernatural creative power” to labor. “Labour,” Marx pronounced at the beginning of the *Critique of the Gotha Programme*, “is not the source of all wealth. Nature is just as much the source of use values (and it is surely of such that material wealth consists!) as is labour, which itself is only the manifestation of a natural force, human labour power.” In the beginning of *Capital*, he cited William Petty, the founder of classical political economy, who had said, “labour is the father of material wealth, the earth is its mother.”²² “Man and nature,” Marx insisted, were “the two original agencies” in the creation of wealth, which “continue to cooperate.” Capitalism’s failure to incorporate nature into its value accounting, and its tendency to confuse value with wealth, were *fundamental contradictions of the regime of capital itself*. Those “who fault Marx for not ascribing value to nature,” Paul Burkett has written, “should redirect their criticisms to capitalism itself.”²³

As with Lauderdale, only with greater force and consistency, Marx contended that capitalism was a system predicated on the accumulation of value, even at the expense of real wealth (including the social character of human labor itself). The capitalist, Marx noted, adopted as his relation to the world: “*Après moi le déluge!*”²⁴ Or, as he was frequently to observe, capital had a vampire-like relation to nature – i.e., represented a kind of living death maintained by sucking the blood from the world.²⁵

Unworldly Economists and their Critics

Nevertheless, the whole classical conception of wealth, which had its highest development in the work of Ricardo and Marx, was to be turned upside down with the rise of neoclassical economics. This can be seen in the work of Carl Menger – one of the founders of the Austrian school of economics and of neoclassical economics, more generally. In his *Principles of Economics* (1871 – published only four years after Marx’s *Capital*), Menger attacked the Lauderdale Paradox directly (indeed, the reference to it as a “paradox” may have originated with him), arguing that it was “exceedingly impressive at first glance,” but was based on false distinctions. For Menger, it was important to reject both the use value/exchange value and wealth/value distinctions. Wealth was based on exchange, which was now seen as rooted in subjective utilities. Replying to both Lauderdale and Proudhon, he insisted that the deliberate production of scarcity in nature was beneficial (to capital). Indeed, standing Lauderdale on his head, he contended that it would make sense to encourage “a long continued diminution of abundantly available

(non-economic) goods [(e.g., air, water, natural landscapes) since this] must finally make them scarce in some degree – and thus components of wealth, which is thereby increased.” In the same vein, Menger claimed that mineral water could conceivably be turned eventually into an economic good due to its scarcity. What Lauderdale presented as a paradox or even a curse – the promotion of private riches through the destruction of public wealth – Menger, one of the precursors of neoliberalism in economics, saw as an end in itself.

This attempt to remove the paradox of wealth from economics led to scathing indictments by Henry George, Thorstein Veblen, and Frederick Soddy, along with others within the underworld of economics. In his best-selling work, *Progress and Poverty* (1879), George strongly stressed the importance of retaining a social concept of wealth:

Many things are commonly spoken of as wealth which in taking account of collective or general wealth cannot be considered as wealth at all. Such things have an exchange value...insomuch as they represent as between individuals, or between sets of individuals, the power of obtaining wealth; but they are not truly wealth [from a social standpoint], inasmuch as their increase or decrease does not affect the sum of wealth. Such are bonds, mortgages, promissory notes, bank bills, or other stipulations for the transfer of wealth. Such are slaves, whose value represents merely the power of one class to appropriate the earnings of another class. Such are lands, or other natural opportunities, the value of which is but the result of the acknowledgement in favor of certain persons of an exclusive right to their use, and which represents merely the power thus given to the owners to demand a share of the wealth produced by those who use them....By enactment of the sovereign political power debts might be canceled, slaves emancipated, and land resumed as the common property of the whole people, without the aggregate wealth being diminished by the value of a pinch of snuff, for what some would lose others would gain.

Carefully examining the changing definitions of wealth in economics, George roundly condemned Say, Mill, and the Austrian school of economics for obliterating the notion of use value and defining wealth entirely in terms of exchange value. Produced wealth, he argued, was essentially the result of “exertion impressed on matter,” and was to be associated with producible use values. Value came from labor. Like Marx, he drew upon the basic tenets of Greek materialism (most famously extolled by Epicurus and Lucretius), arguing that nothing can be created merely by labor; “nothing can come out of nothing.”

Other economic dissidents also challenged the narrow orthodox economic approach to wealth. Veblen contended that the main thrust of capitalist economics under the regime of absentee ownership was the seizure of public wealth for private benefit. Calling this the “American plan” because it had “been worked out more consistently and more extensively” in the United States “than elsewhere,” he referred, in Lauderdale-like terms, to it as “a settled practice of converting all public wealth to private gain on a plan of legalised seizure” – marked especially by “the seizure of the fertile soil and its conversion to private gain.” The same rapacious system had its formative stages in the United States in slavery and in “the debauchery and manslaughter entailed on the Indian population of the country.”

Soddy, the 1921 Nobel Prize winner in chemistry, was an important forerunner of ecological economics. He was an admirer of Marx – arguing that it was a common error to think that Marx saw the source of all wealth as human labor. Marx, Soddy noted, had followed Petty and the classical tradition in seeing labor as the father of wealth, the earth as the mother. The bounty of nature was part of “the general wealth” of the world. Reviving the Lauderdale Paradox, in his critique of mainstream economics, Soddy pointed out that

the confusion enters even into the attempt of the earlier [classical] economists to define...“wealth,” though the modern [neoclassical] economist seems to be far too wary a bird to define even that. Thus we find that wealth consists, let us say, of the enabling requisites of life, or something equally unequivocal and acceptable, but, if it is to be had in unlimited abundance, like sunshine or oxygen or water, then it is not any longer wealth in the economic sense, though without either of these requisites life would be impossible.

In this, Soddy wrote, “the economist, ignorant of the scientific laws of life, has not arrived at any conception of wealth,” nor given any thought to the costs to nature and society, given the degradation of the environment.³¹ Turning to Mill’s contorted treatment of the Lauderdale Paradox, Soddy referred to the “curious inversions” of those who, based on making market exchange the sole criterion of value/wealth, thought that the creation of scarcity with respect to food, fuel, air, etc. made humanity richer. The result was that “the economist has effectually impaled himself upon the horns of a very awkward dilemma.”³²

Despite the devastating criticisms arising from the underworld of economics, however, the dominant neoclassical tradition moved steadily away from any concept of social/public wealth, excluding the whole question of social (and natural) costs – within its main body of analysis. Thus, as ecological

economist K. William Kapp explained in his landmark *Social Costs of Private Enterprise* in 1950, despite the introduction of an important analogue to the orthodox tradition with the publication of Pigou's *Economics of Welfare*, it remained true that the "analysis of social costs is carried on not within the main body of value and price theory but as a separate system of so-called welfare economics." Kapp traced the raising of the whole problem of social wealth/social costs to none other than Lauderdale, while viewing Marx as one of the most devastating critics of capitalism's robbing of the earth.

The Return of the Lauderdale Paradox

Today Lauderdale's paradox is even more significant than it was when originally formulated in the early nineteenth century. Water scarcities, air pollution, world hunger, growing fuel shortages, and the warming of the earth are now dominant global realities. Moreover, attempts within the system to expand private riches by exploiting these scarcities, such as the worldwide drive to privatize water, are ever-present. Hence, leading ecological economist Herman Daly has spoken of "The Return of the Lauderdale Paradox" – this time with a vengeance.

The ecological contradictions of received economics are most evident in its inability to respond to the planetary environmental crisis. This is manifested both in repeated failures to apprehend the extent of the danger facing us, and in the narrow accumulation strategies offered to solve it. The first of these can be seen in the astonishing naiveté of leading orthodox economists – even those specializing in environmental issues – arising from a distorted accounting that measures exchange values but largely excludes use values, i.e., issues of nature and public wealth. Thus, Nordhaus was quoted in *Science* magazine in 1991 as saying: "Agriculture, the part of the economy that is sensitive to climate change, accounts for just 3% of national output. That means there is no way to get a very large effect on the U.S. economy" just through the failure of agriculture. In this view, the failure of agriculture in the United States would have little impact on the economy as a whole! Obviously, this is not a contradiction of nature, but of the capitalist economy – associated with its inability to take into account material realities. Oxford economist Wilfred Beckerman presented the same myopic view in his book *Small Is Stupid* (1995), claiming that "even if the net output of [U.S.] agriculture fell by 50 per cent by the end of the next century this is only a 1.5 per cent cut in GNP." This view led him to conclude elsewhere that global warming under business as usual would have a "negligible" effect on world

output. Likewise, Thomas Schelling, winner of the Bank of Sweden's Nobel Memorial Prize in Economic Sciences, wrote in *Foreign Affairs* in 1997 that "Agriculture [in the developed world] is practically the only sector of the economy affected by climate, and it contributes only a small percentage – three percent in the United States – of national income. If agricultural productivity were drastically reduced by climate change, the cost of living would rise by one or two percent, and at a time when per capita income will likely have doubled."

The underlying assumption here – that agriculture is the only part of the economy that is sensitive to climate change – is obviously false. What is truly extraordinary in such views, however, is that the blinders of these leading neoclassical economists effectively prevent even a ray of common sense from getting through. GDP measurements become everything, despite the fact that such measurements are concerned only with economic value added, and not with the entire realm of material existence. There is no understanding here of production as a system, involving nature (and humanity), outside of national income accounting. Even then, the views stated are astonishingly naïve – failing to realize that a decrease by half of agricultural production would necessarily have an extraordinary impact on the price of food! Today, with a "tsunami of hunger sweeping the world," and at least one billion people worldwide lacking secure access to food, these statements of only a decade ago by leading mainstream environmental economists seem criminal in their ignorance.

The same distorted accounting, pointing to "modest projected impacts" on the economy from global warming, led Nordhaus in 1993 to classify climate change as a "second-tier issue," and to suggest that "the conclusion that arises from most economic studies is to impose modest restraints, pack up our tools, and concentrate on more pressing problems." Although he acknowledged that scientists were worried about the pending environmental catastrophe associated with current trends, the views of most economists were more "sanguine."

None of this should surprise us. Capitalism's general orientation with respect to public welfare, as is well known, is a kind of trickle-down economics, in which resources and human labor are exploited intensively to generate immeasurable affluence at the top of society. This is justified by the false promise that some of this affluence will eventually trickle down to those below. In a similar way, the ecological promises of the system could be called "trickle-down ecology." We are told that, by allowing unrestrained

accumulation, the environment will be improved through ever-greater efficiency – a kind of secondary effect. The fact that the system's celebrated efficiency is of a very restricted, destructive kind is hardly mentioned.

A peculiarity of capitalism, brought out by the Lauderdale Paradox, is that it feeds on scarcity. Hence, nothing is more dangerous to capitalism as a system than abundance. Waste and destruction are therefore rational for the system. Although it is often supposed that increasing environmental costs will restrict economic growth, the fact is that such costs continue to be externalized under capitalism on nature (and society) as a whole. This perversely provides new prospects for private profits through the selective commodification of parts of nature (public wealth).

All of this points to the fact that there is no real feedback mechanism, as commonly supposed, from rising ecological costs to economic crisis, that can be counted on to check capitalism's destruction of the biospheric conditions of civilization and life itself. By the perverse logic of the system, whole new industries and markets aimed at profiting on planetary destruction, such as the waste management industry and carbon trading, are being opened up. These new markets are justified as offering partial, ad hoc "solutions" to the problems generated non-stop by capital's laws of motion.

In fact, the growth of natural scarcity is seen as a golden opportunity in which to further privatize the world's commons. This tragedy of the privatization of the commons only accelerates the destruction of the natural environment, while enlarging the system that weighs upon it. This is best illustrated by the rapid privatization of fresh water, which is now seen as a new mega-market for global accumulation. The drying up and contamination of freshwater diminishes public wealth, creating investment opportunities for capital, while profits made from selling increasingly scarce water are recorded as contributions to income and riches. It is not surprising, therefore, that the UN Commission on Sustainable Development proposed, at a 1998 conference in Paris, that governments should turn to "large multinational corporations" in addressing issues of water scarcity, establishing "open markets" in water rights. Gérard Mestrallet, CEO of the global water giant Suez, has openly pronounced: "Water is an efficient product. It is a product which normally would be free, and our job is to sell it. But it is a product which is absolutely necessary for life." He further remarked: "Where else [other than in the monopolization of increasingly scarce water resources for private gain] can you find a business that's totally international, where the prices and volumes, unlike steel, rarely go down?"

Not only water offers new opportunities for profiting on scarcity. This is also the case with respect to fuel and food. Growing fuel shortages, as world oil demand has outrun supply – with peak oil approaching – has led to increases in the prices of fossil fuels and energy in general, and to a global shift in agriculture from food crops to fuel crops. This has generated a boom in the agrofuel market (expedited by governments on the grounds of “national security” concerns). The result has been greater food scarcities, inducing an upward spiral in food prices and the spiking of world hunger. Speculators have seen this as an opportunity for getting richer quicker through the monopolization of land and primary commodity resources.

Similar issues arise with respect to carbon-trading schemes, ostensibly aimed at promoting profits while reducing carbon emissions. Such schemes continue to be advanced despite the fact that experiments in this respect thus far have been a failure – in reducing emissions. Here, the expansion of capital trumps actual public interest in protecting the vital conditions of life. At all times, ruling-class circles actively work to prevent radical structural change in this as in other areas, since any substantial transformation in social-environmental relations would mean challenging the treadmill of production itself, and launching an ecological-cultural revolution.

Indeed, from the standpoint of capital accumulation, global warming and desertification are blessings in disguise, increasing the prospects of expanding private riches. We are thus driven back to Lauderdale’s question: “What opinion,” he asked, “would be entertained of the understanding of a man, who, as the means of increasing the wealth of...a country should propose to create a scarcity of water, the abundance of which was deservedly considered one of the greatest blessings incident to the community? It is certain, however, that such a projector would, by this means, succeed in increasing the mass of individual riches.”

Numerous ecological critics have, of course, tried to address the contradictions associated with the devaluation of nature by designing new green accounting systems that would include losses of “natural capital.” Although such attempts are important in bringing out the irrationality of the system, they run into the harsh reality that the current system of national accounts *does* accurately reflect capitalist realities of the non-valuation/undervaluation of natural agents (including human labor power itself). To alter this, it is necessary to transcend the system. The dominant form of valuation, in our age of global ecological crisis, is a true

reflection of capitalism's mode of social and environmental degradation — causing it to profit on the destruction the planet.

In Marx's critique, value was conceived of as an alienated form of wealth.⁴³ Real wealth came from nature and labor power and was associated with the fulfillment of genuine human needs. Indeed, "it would be wrong," Marx wrote, "to say that labour which produces use-values is the *only* source of the wealth produced by it, that is of material wealth....Use-value always comprises a natural element....Labour is a natural condition of human existence, a condition of material interchange [metabolism] between man and nature." From this standpoint, Lauderdale's paradox was not a mere enigma of economic analysis, but rather the supreme contradiction of a system that, as Marx stressed, developed only by "simultaneously undermining the original sources of all wealth — the soil and the worker."⁴⁴

Notes

1. See the discussion of Nordhaus's stance on climate change in Richard York, Brett Clark, and John Bellamy Foster, "Capitalism in Wonderland," *Monthly Review* 61, no. 1 (May 2009), 4-5.
2. John Maynard Keynes, *The General Theory of Employment, Interest and Money* (London: Macmillan, 1973), 32.
3. James Maitland, Earl of Lauderdale, *An Inquiry into the Nature and Origin of Public Wealth and into the Means and Causes of its Increase* (Edinburgh: Archibald Constable and Co., 1819), 37-59, and *Lauderdale's Notes on Adam Smith*, ed. Chuhei Sugiyama (New York: Routledge, 1996), 140-41. Lauderdale was closest to Malthus in classical political economy, but generally rejected classical value theory, emphasizing the three factors of production (land, labor, and capital). Marx, who took Ricardo as his measure of bourgeois political economy, therefore had little genuine interest in Lauderdale as a theorist, apart from the latter's sense of the contradiction between use value and exchange value. Still, Lauderdale's devastating critique of the pursuit of private riches at the expense of public wealth earns him a position as one of the great dissident voices in the history of economics.
4. Robert Brown, *The Nature of Social Laws* (Cambridge: Cambridge University Press, 1984), 63-64.
5. Karl Marx, *A Contribution to the Critique of Political Economy* (Moscow: Progress Publishers, 1970), 27. In this article, for simplicity's sake, we do not explicitly address Marx's distinction between *exchange value* and its basis in *value* (abstract labor), treating them as basically synonymous within the limits of our discussion.

6. David Ricardo, *On the Principles of Political Economy and Taxation*, vol. 1, *Works and Correspondence of David Ricardo* (Cambridge: Cambridge University Press, 1951), 276-87; George E. Foy, "Public Wealth and Private Riches," *Journal of Interdisciplinary Economics* 3 (1989): 3-10.
7. Jean Baptiste Say, *Letters to Thomas Robert Malthus on Political Economy and Stagnation of Commerce* (London: G. Harding's Bookshop, Ltd., 1936), 68-75.
8. Karl Marx, *Capital*, vol. 1 (London: Penguin, 1976), 98.
9. John Stuart Mill, *Principles of Political Economy with Some of their Applications to Social Philosophy* (New York: Longmans, Green, and Co., 1904), 4, 6.
10. Mill appears to break out of these limits only briefly in his book, in his famous discussion of the stationary state. See Mill, *Principles of Political Economy*, 452-55.
11. Karl Marx, *The Poverty of Philosophy* (New York: International Publishers, 1964), 35-36, and *Theories of Surplus Value* (Moscow: Progress Publishers, 1968), part 2, 245; Karl Marx and Frederick Engels, *Selected Correspondence* (Moscow: Progress Publishers, 1975), 180-81 (Marx to Engels, August 24, 1867).
12. See Paul Burkett and John Bellamy Foster, "Metabolism, Energy, and Entropy in Marx's Critique of Political Economy," *Theory and Society* 35, no. 1 (February 2006): 109-56, and "The Podolinsky Myth," *Historical Materialism* no. 16 (2008): 115-61; John Bellamy Foster and Paul Burkett, "Classical Marxism and the Second Law of Thermodynamics," *Organization & Environment* 21, no. 1 (March 2008): 1-35.
13. Karl Marx, *Early Writings* (New York: Vintage, 1974), 359-60.
14. Karl Marx, *Capital*, vol. 3 (London: Penguin, 1981), 911, 959, and *Theories of Surplus Value*, part 2, 245. For a discussion of the metabolic rift, see John Bellamy Foster, *The Ecological Revolution* (New York: Monthly Review Press, 2009), 161-200.
15. Karl Marx, *Dispatches for the New York Tribune* (London: Penguin, 2007), 128-29; Herbert Spencer, *Social Statics* (New York; D. Appleton and Co. 1865), 13-44. Herbert Spencer was to recant these views beginning in 1892, which led Henry George to polemicize against him in *A Perplexed Philosopher* (New York: Charles L. Webster & Co., 1892). See also George R. Geiger, *The Philosophy of Henry George* (New York: Macmillan, 1933), 285-335.
16. Marx, *Early Writings*, 239; Thomas Müntzer, *Collected Workers* (Edinburgh: T & T Clark, 1988), 335.
17. E. F. Schumacher, *Small Is Beautiful* (New York: Harper and Row, 1973), 15; Luiz C. Barbosa, "Theories in Environmental Sociology," in Kenneth A. Gould and Tammy Lewis, eds., *Twenty Lessons in Environmental Sociology* (Oxford: Oxford University Press, 2009), 28; Jean-Paul Deléage, "Eco-Marxist Critique of Political Economy," in Martin O'Connor, ed., *Is Capitalism Sustainable?* (New York: Guilford, 1994), 48. Mathew

- Humphrey, *Preservation Versus the People?* (Oxford: Oxford University Press, 2002), 131-41.
18. Thomas Malthus, *Pamphlets* (New York: Augustus M. Kelley, 1970), 185; Ricardo, *Principles of Political Economy*, 76, 287; Paul Burkett, *Marxism and Ecological Economics* (Boston: Brill, 2006), 25-27, 31, 36.
 19. Marx and Engels, *Collected Works* (New York: International Publishers, 1975), vol. 34, 443-507.
 20. Campbell McConnell, *Economics* (New York: McGraw Hill, 1987), 20, 672; Alfred Marshall, *Principles of Economics* (London: Macmillan and Co., 1895), chapter 2.
 21. Nick Hanley, Jason F. Shogren, and Ben White, *Introduction to Environmental Economics* (Oxford: Oxford University Press, 2001), 135.
 22. Karl Marx, *Critique of the Gotha Programme* (New York: International Publishers, 1938), 3; Marx, *Capital*, vol. 1, 134.
 23. Paul Burkett, *Marx and Nature* (New York: St. Martin's Press, 1999), 99.
 24. Karl Marx, *Critique of the Gotha Programme*, 3, and *Capital*, vol. 1, 133-34, 381, 751-52; Paul Burkett, *Marx and Nature*, 99.
 25. On Marx's use of the vampire metaphor, see Mark Neocleous, "The Political Economy of the Dead: Marx's Vampires," *History of Political Thought* 24, no. 4 (Winter 2003), 668-84.
 26. Carl Menger, *Principles of Political Economy* (Auburn, Alabama: Ludwig von Mises Institute, 2007), 110-11. For related views see Eugen Böhm-Bawerk, *Capital and Interest* (South Holland, Illinois: Libertarian Press, 1959), 127-34.
 27. Henry George, *Progress and Poverty* (New York: Modern Library, no copyright, published 1879), 39-40.
 28. Henry George, *Complete Works* (New York: Doubleday, 1904), vol. 6, 121-28, 158, 212-25, 242, 272-76, 292, and *A Perplexed Philosopher*, 51-61; Marx, *Capital*, vol. 1, 323.
 29. Thorstein Veblen, *Absentee Ownership* (New York: Augustus M. Kelley, 1923), 168-70.
 30. Frederick Soddy, *Wealth, Virtual Wealth, and Debt* (London; Allen and Unwin, 1933), 73-74.
 31. Frederick Soddy, *Cartesian Economics* (London: Hendersons, 1922), 15-16; Soddy, *Matter and Energy* (New York: Henry Holt and Company, 1912), 34-36.
 32. Soddy, *Wealth, Virtual Wealth, and Debt*, 63-64.
 33. K. William Kapp, *The Social Costs of Private Enterprise* (New York: Schocken, 1971), 8, 29, 34-36, 231.
 34. Herman E. Daly, "The Return of the Lauderdale Paradox," *Ecological Economics* 25 (1998): 21-23, and *Ecological Economics and Sustainable Development* (Cheltenham, UK: Edward Elgar, 2007), 105-06; Herman E. Daly and John B. Cobb, Jr., *For the Common Good* (Boston: Beacon Press, 1994), 147-48.

35. Nordhaus quoted in Leslie Roberts, "Academy Panel Split on Greenhouse Adaptation," *Science* 253 (September 13, 1991): 106; Wilfred Beckerman, *Small Is Stupid* (London: Duckworth, 1995), 91; "The Environment as a Commodity," *Nature* 357 (June 4, 1992): 371-72; Thomas C. Shelling, "The Cost of Combating Global Warming," *Foreign Affairs* (November/December 1997): 8-9; Daly, *Ecological Economics and Sustainable Development*, 188-90.
36. Fred Magdoff and Brian Tokar, "Agriculture and Food in Crisis," *Monthly Review* 61, no. 3 (July-August 2009), 1-3.
37. William D. Nordhaus, "Reflections on the Economics of Climate Change," *Journal of Economic Perspectives* 7, no. 4 (Fall 1993): 22-23.
38. The argument that such a feedback mechanism exists is known in Marxist ecological analysis as the "second contradiction of capitalism." See James O'Connor, *Natural Causes* (New York: Guilford, 1998). For a critique see Foster, *The Ecological Revolution*, 201-12.
39. Maude Barlow and Tony Clarke, *Blue Gold* (New York: New Press, 2002), 88, 93, 105.
40. Fred Magdoff, "World Food Crisis," *Monthly Review* 60, no. 1 (May 2008): 1-15.
41. Lauderdale, *Inquiry into the Nature and Origin of Public Wealth*, 41-42.
42. On green accounting, see Andrew John Brennan, "Theoretical Foundations of Sustainable Economic Welfare Indicators," *Ecological Economics* 67 (2008): 1-19; Daly and Cobb, *For the Common Good*, 443-507.
43. Burkett, *Marx and Nature*, 82-84.
44. Marx, *A Contribution to a Critique of Political Economy*, 36, and *Capital*, vol. 1, 638.

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