

Marxism in the Balance

Mark S. Meritt
162 Union St #2
Brooklyn, NY 11231.3002

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Introduction

In his theory of society, Karl Marx claimed that there was a contradiction inherent in capitalism such that it was destined to bring about its own end and that communism would inevitably arise from the ashes. The logic of his analysis and the scope of his thinking had an enormous influence on socialist movements, leading to sweeping changes in many nations, even those such as the United States which never adopted socialism.

Many socialist experiments, however, most notably those behind the Iron Curtain, failed, appearing to bring about their own ends even as capitalism continued, indeed continues, to flourish as never before. While criticisms of capitalism still abound, and while it could be argued that few if any socialist experiments were true to Marxist thought, socialism has waned as a presence in the global community. Not unrelated, as industrialization and economic growth have continued, whether in capitalist or socialist regimes, ecological degradation has waxed. Inequalities within human society are increasingly joined by inequalities between people and the rest of nature.

It was only in 1868, after Marx had completed most of his major works, that German biologist Ernst Haeckel even coined the term and founded the discipline of ecology, the study of the relationships between a species and its inorganic and organic environment. Eventually, the discovery of whole ecosystems yielded an expansion of the ecological perspective to the mutual dependence and balance among all inhabitants of an ecosystem (Enzensberger, 1974 / 1996: 17). As ecological science has developed, humanity has gained a much greater knowledge of how living systems work. Only within the last few decades, though, with the publication of Rachel Carson's Silent Spring and the beginning of the environmental movements, did the discipline begin

to capture the public's imagination, bringing to the forefront the position of humans within ecosystems.

Several important ecological and demographic studies have been published since then, such as Paul Ehrlich's The Population Bomb, The *Ecologist's* "A Blueprint for Survival," and the Club of Rome's *Limits to Growth*. Aside from whatever controversies or contradictions may have arisen in their proscriptions, there is a growing consensus on the validity of their claims that our present global society is operating unsustainably, that it will bring about its own end. Further, true to ecology's focus on the relationship among factors within a system, there is increasing evidence that many of our worst social ills and inequalities find their root in the same unsustainable processes that cause ecosystem degradation.

The notion of a system that causes inequalities and also leads to its own demise is more than reminiscent of Marxist theory. But it is one thing to point out that capitalism is a problem and quite another to prove that socialism is its solution (Benton, 1996: 11), much less Marx's particular brand of socialism. Socialism has not been alone in having various versions put forth as supreme over the rest. Indeed, most social movements have a great deal of internal diversity, with factions often pursuing downright contradictory ideals and goals. Given such variation, then, environmentalisms must also justify their claims as solutions to capitalism.

Indeed, while all environmentalisms focus on nature in ways that capitalism does not, many are nevertheless highly dubious with respect to the actual science of ecology. For example, some strains believe that humanity is a blight on the planet and that the rest of the earth would be better off without us. To make such a claim about our species as a whole, rather than about particular social systems, is as good an example as any of human exceptionalism, for which

ecology has no room. Through ecology, such beliefs are revealed to be simply the guilty conscience of unsustainability. They are as integral a part of such a society as any other, rather than proposing an alternative in which humans thrive within a likewise thriving ecosystem.

All that seems clear is that a society that operates inconsistently with the findings of ecology will eventually extinguish itself, whether by ignoring the requirements of sustainability or by guiltily and unnecessarily wiping itself out as undeserving of life. The key here with respect to socialism is that great strides toward human equality cannot exempt a society from unsustainable behavior. As ecological degradation continues, the question of survival takes precedence over hopes for liberation (Enzensberger, 1974 / 1996: 48). If social equality comes along with equality between humanity and the rest of nature, all the better, but whatever else a society may be, if it wishes to be more than a temporary phenomenon it must be sustainable.

Some suggest that the ecological perspective, which appears to ask even more of capitalism than socialism does, threatens Marxism's status as the most radical challenge to the status quo (Benton, 1996: 2). Ecocentrists claim that Marx did not go far enough, and some suggest that Marxist socialism is guilty of some of the same ecological trespasses as capitalism. The conflict runs both ways, as "socialists still believe that ecology is merely an ideology of austerity or is simply a system for ensuring amenities for the middle and upper classes. Most Greens think that socialism is an ideology promoting growth without limit or end" (J. O'Connor, 1991 / 1998: 268). Yet, "just as socialism can only hope to remain a radical and benign pressure for social change by assuming an ecological dimension, so the ecological concern will remain largely ineffective... if it is not associated in a very integral way with many traditional socialist demands" (Soper, 1991 / 1996: 82).

The possibility of a “red-green synthesis” is extremely appealing, yet various questions arise. Is socialism sustainable, or is does it require modification? Would such changes take away what makes it distinctively socialist? How does Marxist thought relate to the ecological perspective? It is possible that people like Al Gore may go to extremes in suggesting that the fate of the Earth itself hangs in the balance with respect to the future of human activity, but we now know that, at least, our own species’ fate will likely be decided by how we account for ecological knowledge. Similarly, the fate of Marxism and socialism hangs in the balance based on their ability to help us face those very same ecological issues. As Hans Enzensberger says, “Marxism is not a theory that exists in order to produce eternal verities; it is not good for Marxists to be right ‘in principle’ when that means the end of the world” (Enzensberger, 1974 / 1996: 37), or at least the end of humanity.

In this paper, I will argue that Marxist thought is insufficient to provide an underpinning for a sustainable society. His theory does not take into account some critical pieces of ecological knowledge, leading to other aspects of his work running contrary to ecology and sustainability. These lapses, however, appear to be due mainly to Marx being a creature of his historical period. In fact, Marx and Engels provide some very solid examples of ecological thinking. Being both extraordinarily insightful in his critique of capitalism and already amenable to ecological ideas, it seems very possible that Marx would have formulated his work to be consistent with the ecological perspective had he access to its findings. Allowing for necessary revisions and enhancements, Marxism may serve as a model for a complete theory of sustainability.

The Insufficiency of Marxist Theory

Marx began developing his theoretical analysis even before the founding of the science of ecology, which was still in its infancy even at the end of Marx's life. The workings of ecosystems were not yet understood, much less the causes and effects of ecological degradation, which itself was not nearly as prevalent as it has become through more than a century of ever more intensive resource exploitation. Enzensberger suggests that the ecological movement came into being only when ecosystemic decline, which had been going on for centuries, began to encroach on areas where the bourgeoisie lived (Enzensberger, 1974 / 1996: 25).

Over time, there have been claims to Marxist insufficiency from various quarters: that it does not adequately explain or address, e.g., sexism, racism and heterosexism. On the other hand, though it is beyond the scope of this paper to demonstrate, the ecological perspective attempts to integrate all these issues, not to mention class and, of course, the relationship between humanity and nature. Its explicit and unique focus on the potential extinction of the human species, perhaps the most fundamental problem of all, commands further attention.

It is thus important to understand the ways in which Marxist theory does not sufficiently account for some crucial pieces of ecological knowledge. By understanding such knowledge, to which Marx himself did not have access, we can begin to consider how to best enhance Marxist thought. Two key concepts to consider in updating Marxist theory are energy economics and the conditions of production.

Energy economics is the application of thermodynamics to economics, i.e., the study of how energy and material resources flow through the economy and the limits they may face. Inasmuch as the human economy is the set of material resources used by humans, it is merely a subsystem of the total global biosphere in which all resources flow. Thus, a school has arisen

which views economics as a subdiscipline of ecology, allowing for a direct application of ecological knowledge to economics.

In ecosystems, material from a given source is moved through some transformative process, and the by-products become a source for yet some other process. In many human production processes, however, linearity replaces the cyclic with by-products often moving into a sink from which they are not easily incorporated into further processes: “Nature is a point of departure for capital but typically not a point of return. Nature is an economic tap and also a sink, but a tap that can run dry and a sink that can clog up” (J. O’Connor, 1998: 185). Such production processes fly in the face of healthy ecosystems and the conservation of energy. As James O’Connor says:

It is now obvious to all but the most hidebound economists (Marxist and non-Marxist alike) that capitalist production (like all production) is based on energy flows and transformations. ... Capitalist production (indeed, all forms of production) is based not only on energy but on natural or biological systems of astonishing complexity. While mainstream ecological economists have demonstrated that the exhaustion of fossil fuels and other nonrenewable resources may lead to unsustainable uses of renewable resources (e.g., soil), in effect, transforming renewables into nonrenewables, few economists have tried their hand at an economic theory based on the ‘biological root’ of ecology. This fact must be regarded as most significant because capitalist production is not only dependent on the exploitation of nonrenewables, but also has devastating effects on the quantity and quality of land, water, air, wildlife, and so on, and of ecosystems generally, which, in turn, limit the range of possibilities open to capitalist accumulation in the future. It is thus obvious that traditional economic and purely historical explanations of capitalist development that neglect the issues of energy and the ‘biological root’ of ecology — like purely naturalistic explanations — are of limited theoretical interest and practical value. (J. O’Connor, 1998: 122-3)

While ignoring energy economics yields many practical problems, it can also result in an important analytical oversight, that of reductionism. In ecology, it is often impossible to reduce the cause of a phenomenon to a discreet set of factors, much less a single one. Indeed, in his efforts to pin down the roots of capitalism, Marx ended up overlooking a factor that has proven itself to be instrumental to understanding our ecological situation: the conditions of production.

Marx defined the three conditions of production: the external physical conditions (natural material resources), the personal conditions (labor power) and the communal, general conditions

(infrastructure for communications and transport). Throughout his work, the human economy is given primacy over the working of ecosystems, the social over the biological. It is therefore not surprising that the forces and relations of production should have been held above the conditions of production, especially the physical, “natural” conditions (J. O’Connor, 1988 / 1996; Benton, 1989 / 1996; Skirbekk, 1994 / 1996). Marx played up history and played down nature because

... the problem facing Marx in his time was to show that capitalist property relationships were historical, not natural. But so intent was Marx to criticize those who naturalized, hence reified, capitalist production relationships, competition, the world market, and the like that he failed to emphasize sufficiently the fact that the development of human-made forms of ‘second nature’ does not make nature any less natural. (J. O’Connor, 1991 / 1998: 277)

Thus, while it may not be entirely fair to label Marx a reductionist, there is no doubt that he did not give equal time to all factors.

Of highest importance was the Marxist stance on limits. Just as capitalism did, Marx spoke of natural resources as if they were unlimited, leading them to be treated as “free goods” (Benton, 1996: 191), a constant, static element in social development (Skirbekk, 1994 / 1996: 131). Indeed, in his critique of Malthus, Engels said, “The productive forces at humanity’s disposal are limitless; the yield from the earth can increase indefinitely through the application of capital, work and science” (Vaillancourt, 1993 / 1996: 52).

However, as quoted earlier from James O’Connor, some resources are nonrenewable while renewable resources can be overexploited so that they cannot replenish themselves. The industrial process continues to be run primarily on non-renewable energy sources, such as fossil fuels and uranium, and to use non-renewable raw materials, such as metals (Enzensberger, 1974 / 1996: 19). It may be that “As the earth is [man’s] original larder, so too it is his original tool house.” (Marx, 1867 / 1978: 346), but, of course, larders and tool houses do not simply stock themselves.

Marx and Engels felt Malthus to be reactionary, thus antithetical to revolution, and so discussion of limits had to be avoided. While certain aspects of Malthusian theory have proved insufficient, the basic idea of limits to natural resource usage has been borne out and is only becoming clearer with time. For Marx, though, a shortage in raw materials was not indicative of natural limits, reflecting instead the inability of capitalism to allow humanity's unlimited potential to be expressed. Socialism was to overcome such problems (Perelman, 1993 / 1996: 67-8). Breaking through this conflict, Ted Benton suggests that recognizing limits concedes nothing to the reactionary view, but rather it provides the starting point of "a powerful argument for *transforming* the prevailing pattern of nature-society interaction" (Benton, 1989 / 1996: 173).

Another key element of Marxist theory related to the conditions of production is the idea of crisis. While the crises caused by the capitalist contradiction between forces and relations of production may be legitimately explained by Marx, capitalism may be moving toward a second, more drastic crisis: a universal, ecological crisis between the forces and relations of production on one side and the conditions of production on the other (J. O'Connor, 1988 / 1996; Skirbekk, 1994 / 1996).

Indeed, James O'Connor goes so far as to pose this as a second contradiction of capitalism (J. O'Connor, 1988 / 1996). Capital would expand interminably were it not for the contradiction which Marx points out, but indeed natural limits on resources provide another factor which brings about an end to capital's self-expansion. This second contradiction may even provide a second possible path to socialism through environmental movements, a second social barrier to capital. Though this does not deny the possibility of a path through the labor movement, it diminishes the extreme focus on labor as the only pathway and reduces the essential

quality of labor as savior (J. O'Connor, 1988 / 1996: 211). Further, Gunnar Skirbekk suggests that, in extractive rather than reproductive forms of production, at least some value is inherent in resources themselves rather than coming entirely from labor (Skirbekk, 1994 / 1996: 133). Thus, labor receives another blow.

Labor is then no longer seen as the only resource exploited by capitalism. Indeed, since material resources are necessary for humanity's very survival, and the existence of labor is predicated on the presence of material resources, they seem to deserve primacy. Their continued overexploitation must lead to either the impoverishment of future generations or even the extinction of the human species. A new focus needs to be placed on the conditions of production as an integral factor in historical development, rather than considering only the opposition between the relations and forces of production (Skirbekk, 1994 / 1996: 131).

The Ecological Inconsistency of Marxist Socialism

Now that we have seen some insufficiencies in Marx's theory of society, it is time to turn to Marxist socialism, the model of society which grew from the theory, to see the ways in which it is inconsistent with the ecological perspective. Of course, nothing says that the solution to capitalism must be its diametrical opposite, but it is also clear that any solution must address all the fundamental problems of capitalism. A proposal which keeps any of these fundamentals may not be able to make good on its promises. This appears to be the case with Marxist socialism, in which some of the unsustainable features of capitalism were not recognized as such by Marx and Engels and were thus preserved.

The non-ecological aspects of capitalism preserved in Marxist socialism are all deeply

rooted in our global culture and remain prevalent to this day. Some have to do with how the future will play itself out. First, there is a general sense of progressivism, the notion that improvement is simply destined to occur, through late capitalism and onward into communism. In terms of the active role which people will play, there is an affirmation of top-down processes in bringing about the transition to communism and in maintaining it. Finally, and despite some evidence to the contrary to be explored later, a non-ecological conception of nature runs through the entire body of Marx's work.

Progressivism entails a complex of related ideas, perhaps not coincidentally all related to economic growth, in both the traditional and ecological senses: productivism, technological development, industrialism, abundance, population growth, urbanization, globalization. Kate Soper sums up some of the key aspects of progressivism in Marx and how it relates to the ecological perspective:

... historical materialism itself... seems to accord priority to the 'development of the productive forces' as a criterion and goal of social progress, which makes appeals to an era of communist 'abundance,' and which attaches importance to the advanced technological infrastructure that capitalism will bequeath to the socialist postrevolutionary forces of renewal. The 'productivist' dynamics of this portrayal of human development, the associated faith in the virtues of technical growth, and the implied anthropocentric and instrumental attitudes to the rest of nature — all this is more or less diametrically opposed, it seems, to the green emphasis on sustainability, on *reproductive* rather than growth economies, on *deindustrialization*, on sober consumption, and on a more humble and holistic approach to world ecological balance. (Soper, 1991 / 1996: 83)

One fundamental way in which all problems are exacerbated is through population growth. Basic population ecology models show that an increase in food availability will yield an increase in population (Gotelli, 1998: 129). Thus, increasing agricultural efficiency, industrially or not, drives population growth. As Marx and Engels suggest in the *Manifesto*, globalization brings new products to market, creating new wants in people (Marx & Engels, 1888 / 1978: 476). However, because the population is always growing as a result of improved agricultural techniques, "... even

given an enormous expansion in industrial production, the chances of satisfying human needs deteriorate per capita” (Enzensberger, 1974 / 1996: 19). The idea that all people will eventually live in the abundance of industrialized nations is essentially negated by acknowledging the limited nature of material resources and the ecological degradation that occurs with increasing extraction. Indeed, in a materially finite world, this leads directly to a refutation of Bentham and Mill’s notion of the greatest good for the greatest number. While one can be maximized or both can be optimized, it is logically impossible to maximize both (Daly, 1996: 220; Hardin, 1993: 264).

The Swedish ecologist Gösta Ehrensvärd believes that industrialization itself is responsible for our present social structure (Enzensberger, 1974 / 1996: 21), while social theorist Daniel Quinn (Quinn, 1999) argues that hierarchicalization increases with population growth. Thus, the larger the population, the greater the inequality inherent in the social structure. The conclusion, it appears, is, as Rudolf Bahro puts it, that “humanity has not only to transform its relations of production, but must also fundamentally transform the entire character of its mode of production” (cited in Soper, 1991 / 1996: 84).

The notion that things can get better is not at all foreign to the ecological perspective. Indeed, this perspective yields, as with all social movements, attempts to improve human society based on the criteria it views as fundamental. However, the notion of progress simply needs to be rethought. The switch to sustainability

... implies changes in our conception of what is progressive and what is not. It also implies changing certain fundamental values and attitudes: a respectful, rather than an aggressive and exploitative, attitude toward the laws of nature; and an emphasis upon cultural, social, and political values, instead of an exaltation of economic growth in the traditional sense. (Skirbekk, 1994 / 1996: 136)

When growth is unsustainable, progress must be viewed qualitatively, not quantitatively.

One more important idea flows from progressivism, the notion of teleology, that processes

are geared toward a particular end result. Marx didn't simply envision socialism as a worthwhile alternative to capitalism, he felt it was destined to come, that capitalism must systematically turn into socialism. Marx's theory of capital is rife with statements of one thing inevitably leading to another. On one hand, analysis of this kind is one of his strengths, inasmuch as understanding systemic relationships provides the clearest basis for critique. However, for Marx, barbarism is the "predestined prey of conquest" (Marx, 1853 / 1978: 659), only capable of existing along with the "immature development of man individually" (Marx, 1867 / 1978: 327). Man must move onward, and all roads lead to capitalism: "If, therefore, on the one hand, it presents itself historically as a progress and as a necessary phase in the economic development of society, on the other hand, it is a refined and civilised method of exploitation" (Marx, 1867 / 1978: 400). Luckily, its contradiction inevitably points the way out of exploitation toward primitive communism then finally to perfect communism, the one social system toward which humanity had been striving all along. Marx says in *Private Property and Communism*, "But since for the socialist man the *entire so-called history of the world* is nothing but the begetting of man through human labour, nothing but the coming-to-be of nature for man, he has the visible, irrefutable proof of his *birth* through himself, of his *process of coming-to-be*" (Marx, 1932 / 1978: 92). Just as Marx claims that the capitalist thinks that people in any other system are not human, so goes Marxism.

History has shown this unilineal progression, common in various forms to many theories of cultural evolution, to be simply false. The former Soviet Union moved from communism (of a sort) into capitalism. Various Third World countries have appeared to accomplish what was thought impossible for Russia in the 19th century, a jump past capitalism into socialism, and yet

none of these countries, in or out of socialism, has achieved what they would consider to be a fulfilling society. Social structures cannot be seen simply as stages in an inevitable process with any attendant evils simply requiring acceptance. To paraphrase the critique of Feudal Socialism in the *Manifesto* (Marx & Engels, 1888 / 1978: 492), nothing is easier than to give Marxist socialism a Christian salvationist tinge, in which suffering in the present is justified because it is the inevitable pathway to something better. It is clear that something better than what we have now is required, but it is highly doubtful that what we have now is something that we as a species had to experience.

The method through which the proletariat are said to be destined to perfect society is world-wide organization, after which they will take over the state and centrally administer the workings of society as well as the withering away of the state itself. This reveals another assumption in Marxist thought, an adherence to top-down processes. Over the last several decades, many new social movements, critiquing centralization, globalization and uniformization, have affirmed beliefs in diversity, specificity, identity and localism. Perhaps not coincidentally, the ecological perspective itself suggests the benefits of economic decentralization and cultural difference (Leff, 1993 / 1996: 151). This flows from a focus on natural cycles and processes which work bottom-up. In top-down processes, “It often — if not always — emerges that measures to control one critical factor cause another to go out of control” (Enzensberger, 1974 / 1996: 20). Attempts to correct something undesirable will simply be “stopgap techniques that do not touch the roots of the problem” (Enzensberger, 1974 / 1996: 45). As in medicine, an ounce of prevention, a bottom-up measure, is worth a pound of cure, a top-down measure which may have negative side effects.

Marx's beliefs that revolution had to come from the lower classes and that any individual could understand revolution jibe with a bottom-up focus, but mostly symbolically. In terms of processes, he proscribes organization and administration on large scales to achieve the revolution then ensure equal distribution to each according to their needs. Thus, though the focus may be on the lowest class of society, activity really ends up being top-down. The difference is between workers as the bottom of an organizational hierarchy versus administration as the top of a process.

This focus on bottom-up processes may be the most radical piece of knowledge that ecology has to offer given that, even today, true bottom-up processes are virtually ignored. For example, we still think that top-down measures like prisons and food aid are the proper responses to crime and famine respectively, when other measures may, in the long run, provide more stable and lasting solutions to crime and hunger. Tying this into the critique of capitalism, environmental protection and restoration, top-down measures as opposed to preventing environmental problems in the first place, have emerged as growth industries of which capitalism itself can take advantage. Enzensberger suggests the rise of an eco-industrial complex that makes profit in two ways, first by producing goods in ways that damage ecosystems, second by earning money repairing the damage (Enzensberger, 1974 / 1996: 27). Indeed, criticism of standard economic measures such as the Gross National Product (GNP) have come from many quarters, noting that environmental cleanup costs actually contribute to the GNP and give the impression of economic health even as the conditions for a healthy economy are degraded (Daly, 1996: 112).

Undergirding everything, from the analytical insufficiencies to the flaws in the socialist model, is a patently unecological conception of nature. Of course, there are many places where

Marx and Engels note that man is a part of nature, but such statements are not sufficiently borne out in the rest of their work, where anthropocentrism reigns and nature remains something to be conquered, or at least controlled. For Marx and Engels, human mastery of nature does not entail reckless exploitation as it does with capitalism, but “a judicious management of the sort advocated by Francis Bacon, who says that man can and should modify nature, but only while remaining within the rules that it lays down, and that nature must be obeyed if one wishes to give it commands” (Vaillancourt, 1993 / 1996: 60). Even so, obeying nature’s laws makes limitless production impossible. Thus, if this is truly their conception of nature, they contradict themselves in their productivism. Indeed, if Marxism prizes the discovery of scientific laws and their application to human society for its betterment, and if ecology demonstrates the need for biodiversity to keep human society from extinction, Marxism must appreciate non-human life in order to be true to itself (J. O’Connor, 1998: 7), and thus Marxist anthropocentrism is contradicted yet again.

In the end, Marxism, which claims to reconcile nature and nurture, will forever be tied to human exceptionalism. The means of production may not belong to individuals, but societal ownership trumps that of the rest of non-human nature (Fedoseev, 1976 / 1982: 331). Biologists James L. Gould and Carol Grant Gould support this notion, saying, “As adamantly as the creationists they ironically despise, Marxists require our species to be unique” (Gould & Gould, 1983: 67).

Ecological Thinking in Marxism

Marx’s conception of nature, so literally fundamental to the rest of his work, can

nevertheless not be laid at his feet. To this day, most of the world treats nature as something to be conquered, as a possession of the human species. Even environmentalists who discuss stewardship betray a belief that human beings, unlike all other species, are here to manage the Earth. The roots of such a view of nature lie deep in our cultural history. Even those who firmly understand this often end up betraying their beliefs by their actions. It is hardly Marx's fault that he shared this view. Similarly, all the other insufficiencies and inconsistencies described above truly appear to be due to the simple non-existence of ecological scientific information in Marx's time.

Indeed, it is to his and Engels' credit that they could even make statements about the integration of man and nature. Such statements are among the many examples of thought that is, at least to some degree, genuinely ecological. There are two kinds of ecological thought in Marx's work, that which is symbolically ecological and that which overtly involves issues related to ecological science.

Several symbolically ecological aspects of Marxist thought relate to labor, not the least of which is, per above, the focus on labor in a bottom-up view of power in society. The analysis of the working day is also particularly ecological, describing the need to conserve resources and optimize day-length around an equilibrium between opposing forces: Modern machinery is "an industrial *perpetuum mobile*, that would go on producing forever, did it not meet with certain natural obstructions in the weak bodies and the strong wills of its human attendants" (Marx, 1867 / 1978: 405). Indeed, the law of conservation of energy, crucial to an understanding of the limits of natural resources, denies the possibility of perpetual motion, to which Marx draws a direct parallel here.

The very idea of a systemic contradiction to capitalism is also ecological, tantamount to a declaration of unsustainability even though it does not deal specifically with ecosystemic issues. Even the basis of the contradiction, the exploitation of surplus value, value created by labor above and beyond what it requires for its own reproduction, parallels the unsustainability of economic growth beyond a sustainable, equilibrium pattern of resource use. Indeed, whether or not there really is a second contradiction in capitalism, Marx's original model holds: the capitalist is to labor as humans are to nature, and the exploiter must learn to find satisfaction in equilibrium. Finally, the dialectic itself is perhaps the most significant symbol of ecology, proposing the mutual effect of disparate factors just as ecology does (Soper, 1991 / 1996: 89).

Beyond the merely symbolic, Marxism has many overtly ecological concepts. Above all else, even as other aspects of Marxism oppose humans to the rest of nature, Marx did envision a reconciliation in which man ceased to be alienated from nature. He directly criticized capitalism's "real contempt for, and... practical degradation of, nature" (Marx, 1932 / 1978: 50), and felt that, under socialism, the appropriation of nature would become based on need rather than profit. Engels, in his *Dialectics of Nature*, actually expresses an attitude toward nature that tempers the human desire for control, respecting nature's complexity and the possible unintended consequences of human action: "Let us not, however, flatter ourselves too much as to our victories over nature. For each one of these, it takes its revenge. Initially, each victory certainly has the consequences which we anticipated, but at a second or third remove, it has effects that are so different, so unforeseen, that too often the initial achievement is destroyed" (cited in Vaillancourt, 1993 / 1996: 58). Further, in the *Critique of the Gotha Program*, Marx says, "Labour 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 labour...” (Marx, 1891 / 1978: 525), showing the analytical distinction between labor producing all value and nature producing all wealth.

The dialectic itself, more than being simply symbolic, was even put to use in an analysis of actual ecosystems in Engels’ *Dialectics of Nature*:

... animals modify the natural environment as do men, although to a lesser degree, and, as we have seen, the modifications which they have effected in their surroundings react in turn to transform the actors themselves. For nothing happens in isolation in nature. Every phenomenon reacts on the other, and inversely, and it is usually because they forget this dynamic and this reciprocal action that your scholars are prevented from understanding the simplest things. (cited in Vaillancourt, 1993 / 1996: 57)

Environmental movements have incorporated a focus on occupational health about which, indeed, Marx and Engels had a great concern. Beyond this is the idea of how laborers might find a way to contribute to ecological health. Marx makes clear that, under socialism, one possible way for laborers to enjoy surplus labor is as free time, spent on endeavors other than production. Freedom from capitalism would yield a different structure of human needs, not as oriented toward material goods. While there is no guarantee that all laborers would engage themselves in only sustainable practices at all times, the prizing of leisure as is at least a step in the right direction (Soper, 1991 / 1996: 93-95). More importantly, Marx’s more general attitude of production geared toward fulfilling needs as opposed to profit is perhaps the clearest indication of a predisposition toward truly ecological, sustainable ideas, toward quality over quantity.

In several works, Marx and Engels express direct concern over ecosystemic degradation. Perelman notes that Marx is most sensitive to the idea that, at least under capitalism, the supply of raw material can be outstripped by demand (Perelman, 1993 / 1996: 74-75). Specifically, there are numerous places where Marx points out how the capitalist need for profit can exhaust the soil and prevent further productivity (Marx, 1867 / 1978: 318, 416). Further, he explicitly relates the exploitation of ecosystems with that of the worker, saying that “all progress in capitalistic

agriculture is a progress in the art, not only of robbing the labourer, but of robbing the soil; ... Capitalist production... [saps] the original sources of wealth — the soil and the labourer” (Marx, 1867 / 1978: 416-7). Domination is not merely the appropriation of a surplus but a process that is destructive of both human societies and ecosystems (M. O’Connor, 1994: 5). Vaillancourt also notes also that “In volume 2 of *Capital*..., Marx describes the plundering of the forests under capitalism in very modern terms... In volume 3..., Marx speaks about the pollution of the Thames River by sewage waste, which could have been usefully recycled for agriculture, and about the conservation of raw materials” (Vaillancourt, 1993 / 1996: 55).

The Marxist appreciation for science is also consistent with the ecological perspective. Some Green circles may appear Luddite on this count but many are not hostile toward science and technology in and of themselves, acknowledging their mixed nature. Science and technology may in principle be benevolent forces and need not be unecological (Soper, 1991 / 1996: 92). Indeed, ecological knowledge must be scientific knowledge (Alier, 1989 / 1994: 33), and technology is used in varying degrees throughout the kingdom of life.

Finally, the integrative ecological perspective suggests that all forms of domination — class, gender, race, etc. — will come to an end when humanity stops dominating nature and allow new social structures to develop. This is highly parallel to Marx’s idea that human emancipation will follow mere political emancipation. Indeed, this is perhaps the most important aspect of the ecological perspective next to its stress on the basic continuation of the human species.

Conclusion - The Future of Marxism

Since the rise of the ecological perspective, various forms of Marxism have attempted to

address its concerns. While humanist eco-Marxists have tried to develop an ecologically sensitive Marxist response to the environmental crisis, orthodox eco-Marxists make no apologies for being anthropocentric and productivist, criticizing humanists eco-Marxists for being “idealistic, voluntarist and decidedly ‘un-Marxist’” (Eckersley, 1992 / 1996: 272). Yet, Robyn Eckersley feels that even humanist Marxists rely on concepts of freedom from the scarcity of nature, basing their reconciliation of man and nature on domestication of, rather than integration with, nature. Thus, she believes that both streams of eco-Marxism perpetuate an instrumentalist and anthropocentric attitude toward the rest of nature and that neither is consistent with ecocentrism.

Working from his proposed contradiction between self-expanding capital and self-limiting nature, James O’Connor attempts to be both ecocentric and Marxist at the same time. He suggests “giving what used to be called ‘orthodox Marxism’ final rites” (J. O’Connor, 1994 / 1998: 289) and pushing beyond humanist Marxism to a true ecological Marxism, a theory of society and social change, which would hopefully lead to ecological socialism, a new set of sociomaterial practices (J. O’Connor, 1998: xiii).

He believes that modifications to Marxist thought are necessary because Marx’s historical materialism is “neither historical nor materialist enough: not historical enough because Marx did not have a theory of society and culture beyond the theory of commodity and capital fetishism..., not materialist enough because *Capital* does not contain a theory of nature and ecology” (J. O’Connor, 1994 / 1998: 289). Again, these lapses appear simply to be a result of Marx’s place in time, when “A uniquely industrial capitalist culture and nature were in their embryonic stages; the cultural and ecological elements are missing in orthodox Marxism, because there was little specifically capitalist culture and nature to theorize” (J. O’Connor, 1994 / 1998: 290).

Ecological Marxism differs from traditional socialism in several ways. Among the most notable are a focus on the production and reproduction not of capital but of the conditions of production, leading to an upgrading of issues related to land, community and site-specificity. Additionally, James O'Connor resurrects Marx's own bottom-up focus on productive justice, as opposed to the top-down distributive justice socialist movements have often sought as a quick-fix alternative to capitalism (J. O'Connor, 1998: 324).

Marx and Engels, though, were not the first political ecologists as some have claimed. James O'Connor suggests that they would be best described as conservationists, as there is no real intellectual connection between them and the founders and practitioners of ecology, energy economics and the like. Despite all else, they stress man's capacity to control nature rather than the autonomy and unpredictability of nature's own economy and hence of production itself (J. O'Connor, 1998: 124-5). Nevertheless, they remain much closer to the ecological perspective than the utter disregard of capitalism.

In the end, ecologically speaking, Marxism is a mixed bag. The central concept of a capitalist contradiction, a flaw in the system which brings about its own end, is essentially a claim of unsustainability, acknowledging a divergence between the needs of capital and the needs of human beings, whether one believes that there is a single contradiction or, as James O'Connor does, more than one (Lebowitz, 1992 / 1996: 228). Marx's analysis of this contradiction was incredibly detailed and employed many ecological ideas. The dialectic was also highly sophisticated, its notion of integration and mutual effect paralleling the very basis for ecology itself.

Marxism's notion of reconciling man and nature is, indeed, at the root of the ecocentric

project. However, because Marx preceded the development of ecological science, he simply did not have the tools with which to truly make good on that reconciliation. Marx and Engels both “waver back and forth between an anthropocentric framework, on the one hand, and a naturalist perspective... on the other” (Vaillancourt, 1993 / 1996: 59).

As originally formed, Marxism was already to a great extent in the spirit of ecological thinking. Further, it provided a brilliant critique of capitalism which to this day remains the most ecologically offensive social system, in fact and perhaps even in theory. Marxism thus remains relevant, as James O’Connor suggests: “Marxist-type theories have more to say about ecological crisis than liberalism and other types of mainstream economic thought. This is so because Marxists have an economic crisis theory (or more accurately, crisis theories) that express the contradictions of capitalism” (J. O’Connor, 1998: 186).

Given this, the potential contribution of Marxism to the ecocentric project is enormous, both in and of itself and as a foundation for a comprehensive theory of unsustainability and its alternatives. Now that the science is available and the need for it grows greater each day, modifying Marxism seems both possible and desirable. Nevertheless, Vaillancourt does “not believe that one should go so far as to say that ecology is actually a type of Marxism... [Marx and Engels] should take their place beside other forerunners, but they are not, strictly speaking, important founders of ecology” (Vaillancourt, 1993 / 1996: 61).

If Marxist thought was brought in line with ecological science, though, would it still be Marxism (Benton, 1996: 244)? Would whatever is essential to Marxism be lost? For example, Marxism could be seen as essentialist about production, where ecocentrism, while far from prohibiting production, could never be described as essentialist about it (Benton, 1996: 244).

Perhaps the issue is merely a semantic one. Marxism's contributions to theories of social change have been groundbreaking, and we would have no less a debt to Marx if the ecological perspective were not called Marxism. Like everything, Marxism itself is subject to the dialectic, to interaction with other ideas and to evolution toward new, integrated syntheses. All we can hope is that theories of social change proceed as much as possible toward validity and that they help us find ways to improve our lot.

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