critical essays based on an agreed-upon division of labor with respect to the book's main themes. As it turned out, three of the following contributions originate in the New York group, which also decided to include a fourth (by CNS *editor Alan Rudy), which is an expanded version of a key point in a review of* Marx's Ecology *that Alan wrote for another publication.*

We have invited Foster to reply to any or all of the essays below. Hopefully, his "reply to critics" will appear in the September issue together with any rejoinders the symposiasts wish to make. We also extend an open invite to CNS *readers to weigh in with their views. As with future symposia, we'll keep the present one going as long as readers and writers have something new to say about Foster's book and the many issues it raises.* — **J. O'C**

Failed Promise

By Maarten de Kadt and Salvatore Engel-Di Mauro

John Bellamy Foster places the development of Marx's scientific thinking in the context of the science of Marx's own time; thus the achievement of his book is its contribution to the history of ideas. *Marx's Ecology* traces Marx and Engels' role in the development of modern ecological thinking and is informative and entertaining to read.

The book, however, reveals profound weaknesses. First, even though Foster asserts he will not impose modern ecological concepts back into the thinking about nature in the 1800s, he in fact does so. Thinking about nature was then at a relatively early stage, and because of advances in physical, natural and social science, such thinking is qualitatively different now. Such thinking was not able to consider the scale and kinds of interaction between human beings and the rest of nature that characterizes the present. Secondly, Foster ignores major historical developments in the theory and practice of ecology itself and thereby fails to make his work relevant to the development of either ecological or ecological Marxist theory. Lastly, his attempts to critique "Green Theory" fail; Foster never discusses what a unified Green Theory would look like and, instead, he homogenizes a set of diverse frameworks associated with often opposing political perspectives (implicitly conflating, *inter alia*, liberals, feminists of various persuasions, anarcho-communists and social ecologists).

Foster would seem to agree with the above observation regarding the qualitative change in the sciences since Marx's time when he sets up his own criteria for the evaluation of his book:

> No doubt this analysis, since it emphasizes the ecological elements of Marx's thought, will be criticized by some for merely reading contemporary views on ecology ahistorically back into his work. But such a criticism would completely miss the point, since the intention here is not to "Green Marx" in order to make him "ecologically correct." Rather the aim is to highlight the weaknesses of contemporary Green theory itself, as a result of its failure to come to terms with materialist and dialectical forms of thinking that, in a period of the revolutionary rise of capitalist society, led to the discovery of ecology (and more importantly socio-ecology) in the first place (19).

We kept this goal in mind while reading this engrossing book and were disappointed to find it was not realized.

Foster's purpose is to show that Marx and Engels had a sophisticated understanding of how nature affects humans and how humans affect nature (codetermination). According to the author, the thinking relies on both contemporary thought (that of the middle and last half of the 1800s) and an interpretation of the ancient philosopher Epicurus' materialist understanding of nature, the study of which Marx undertook in his own dissertation (1841). Foster's main point is to show that Marx understood the complex relation between humans and nature and that the analysis of that relation, an analysis of which Marx himself was aware, long preceded Marx.

To show the depth of Marx's thinking about nature, Foster reviews Marx's development and use of dialectics in social and scientific thinking. Foster's examples remind us that for Marx, land is an instrument of food production and that capitalist social relations of production deplete the soil. Marx and Engels offer long discussions of the depletion of the soil and the history of contemporary agriculture. Foster illuminates their understanding thusly (163):

> "Capitalist production," Marx observed, "turns towards the land only after its influence has exhausted it and after it has devastated its natural qualities." Further, this could be viewed in relation not only to the soil but also to the antagonistic relation between

> town and country. For Marx, like [the German agricultural chemist Justus von] Liebig, the failure to return to the soil the nutrients that had been removed in the form of food and fiber had its counterpart in the pollution of the cities and the irrationality of modern sewerage systems. [Marx]...noted that "In London… they can do nothing better with the excrement produced by 4 1/2 million people than pollute the Thames with it, at monstrous expense." Engels was no less explicit on this point.…Marx was adamant in insisting that the "excrement produced by man's natural metabolism," along with the waste of industrial production and consumption, needed to be returned to the soil, as part of a complete metabolic cycle.

The reader will note that this discussion is about land as an instrument of production being destroyed by the separation of town and country in the capitalist mode of production. Yet while Marx discusses human waste, he does not discuss chemical wastes. It may be correct to call it an "ecological" discussion, but using that term would impose back on Marx a concept he did not use. And if it is ecological, it is ecological in a limited sense. It is only one element of ecological science as this is generally understood today.

The term ecology, Foster tells us (195), was coined in 1866, a year before the publication of Volume I of *Capital.* It was a word intended to capture an understanding of the dialectical relation between humans and nature. Here is the 1866 definition formulated by Ernst Haeckel given to us by Foster:

> By ecology we mean the body of knowledge concerning the economy of nature — the investigation of the total relations of the animal both to its inorganic and its organic environment; including above all, its friendly and inimical relations with those animals and plants with which it comes directly and indirectly into contact — in a word, ecology is the study of all those complex interrelations referred to by Darwin as the conditions of the struggle for existence. This science of ecology, often inaccurately referred to as "biology" in a narrow sense, has thus far formed the principal component of what is commonly referred to as "Natural History."

In our view, this striking definition of ecology coined so long ago is a more limited conception of ecology than the present-day one. Here the concern pertains to the issues of Marx's day, which included the human relation to land and the evolution of species, both understood through complex dialectics. At the time, these relations seemed to encompass the struggle for existence. It was a local, not a global definition; today a definition of ecology would include much more. Foster himself suggests a broader view of ecology on the first page of his book, *The Vulnerable Planet*:

> Human society has reached a critical threshold in its relation to its environment. The destruction of the planet, in the sense of making it unusable for human purposes, has grown to such an extent that it now threatens the continuation of much of nature, as well as the survival and development of society itself. The litany of ecological complaints plaguing the world today encompasses a long list of urgent problems. These include: overpopulation, destruction of the ozone layer, global warming, extinction of species, loss of genetic diversity, acid rain, nuclear contamination, tropical deforestation, the elimination of climax forests, wetland destruction, soil erosion, desertification, floods, famine, the despoliation of lakes, streams, and rivers, the drawing down and contamination of ground water, the pollution of coastal waters and estuaries, the destruction of coral reefs, oil spills, overfishing, expanding landfills, toxic wastes, the poisonous effects of pesticides and herbicides, exposure to hazards on the job, urban congestion, and the depletion of nonrenewable resources.

Foster, in *Marx's Ecology*, successfully argues that Marx and Engels had a conception of the relation of humans to nature — an important understanding that, Foster argues, has led to advances in ecological analysis. But today's broader sense of ecology should not be applied to the 1800s. And, as a check of *Capital, Vol. I* shows, the term "ecology" (at least in translation to English) was not used by Marx.

Dramatic changes, qualitative (not merely quantitative) changes, have occurred since Marx's time in our understanding of the natural world. Most dramatic is the oncoming of the nuclear age in which a few bombs could annihilate the entire planet. More subtle, but also

damaging to the environment has been the development of chemical sciences that produced PCBs, CFCs, and DDT, to name only three highly toxic substances.

"Nature" as used by Marx is narrower than "ecology" or at best a small part of it. To his credit, Marx saw production concretely, materially, specifically as the process in which humans and nature interact. But even that analysis does not capture ecology broadly defined, and it does not begin to capture the concept of "sustainability" broadly defined.

Foster's promise (19) to "highlight the contemporary weaknesses of Green theory" is, by gross theoretical generalization and omission, not fulfilled. "Green theory" remains largely undefined throughout the text, and one is left wondering whether Foster intends disingenuously to lump together such fundamentally different theoretical frameworks as Deep Ecology, Social Ecology, and Ecofeminism, among others, not to speak of their internal variants. Furthermore, there is little elaboration of "Green theory" itself. This makes Foster's argumentation susceptible to the charge of setting up such theory as a "straw man" with elusive characteristics and theoretical proclivities occasionally dangled opaquely before the reader.

The problem of too little exposure to "Green theory" is compounded by a lack of engagement with recent ecological theories, which also have problematized earlier and still predominant equilibrium-based approaches. Ecological analysis (especially analysis that has built on Darwin's and Marx's work) has progressed well beyond Marx. Since the "new ecology" of the early 1990s, the understanding of ecological dynamics has been shifting away from presuppositions of equilibria and carrying capacities, which, for instance, underlie Marx's concept of a "metabolic rift." Studies have demonstrated that ecological dynamics are based on (non-linear) change and conditions of disequilibria. This is not to say that Foster necessarily adheres to out-dated ecology theories; the problem is that he does not discuss these recent developments at all. Moreover, the complex systemic interactions that characterize an ecosystem have also been approached increasingly through biogeochemical cycles that could not have been appreciated in the 19th century.

Irrespective of such glaring omissions, Foster castigates those who have been inattentive to ecological relations. "The Frankfurt School, which followed the lead of Lukács…developed an 'ecological' critique which was almost entirely culturalist in form, lacking any knowledge of ecological science (or any ecological content)…." (245). Though we

partly agree with his critique of the Frankfurt school (see Costas Panayotakis' essay below), we find it ironic that Foster should indict entire schools of thought for the same inadequacies that characterize his own work. The lack of knowledge of ecological theory evinced in *Marx's Ecology*, moreover, contrasts markedly with Marx's consistent attempts to integrate new scientific approaches, which required that he keep up with contemporary research in the natural sciences.

Integration of different scientific fields is definitely a tall order and one that we are not certain anyone would have been able to accomplish. Indeed, this is yet another crucial difference between the present and the 19th century. To impose ecology, especially the "new" ecology, back on Marx would be to commit the historical fallacy of *post hoc ergo ex hoc* (it happened after Marx, therefore it originated from him). It would be analogous to imposing capitalism back on markets in antiquity. Such an imposition loses the ability to note the specific differences in each epoch, in each different mode of production, that is, to historicize concepts, a basic rule of Marx's method. As noted, ecology is currently conceived in a broader, more global and non-equilibrium sense; it is more than humans' relation to production using the fruits of the rest of nature (166) or to the evolution of the species. We stress that Marx could not have foreseen much of the human/nature relation, understood in the term "ecology" as used today.

Surely Marx, in his day, had his significant say on the relation between nature and human beings. We certainly do not wish to minimize Marx's enormous contributions to enhancing the development of ecological theories. At the same time, what has developed since Marx and Darwin cannot be reduced to their contributions alone. Marx may have laid some of the foundations for modern ecological thinking, but the scale of his analysis and, more importantly, his methodological approach is insufficient. Let us not lay 120 years of additional scholarship and experience about society and science all at Marx's feet.

Irrespective of the above critique, we appreciate Foster's important and insightful contribution to ecological thought. During the early 1970s there was an almost complete disinterest by students of Marx in an examination of nature and of the ways in which technological change could be understood. Organizing environmental discussions at URPE conferences (for example) late in the 1970s was difficult to do and drew little attention. Yet even in the 1970s eco-Marxists such as Sacristan, Miyumi, Leff, Alier, and many others were correcting this lack. Foster's work, as is true of the work of many other Marxists, reminds us that including the environment in our understanding of production is absolutely necessary, even though he is silent on manufacturing,

transport, and other branches of the economy, as noted by Martin O'Connor in an early contribution to *CNS*. The strength of his book will remain the author's assertion that a "theory of ecology as a process of change involving contingency and coevolution is necessary [for us] not only to understand the world but to change it in conformity with the needs of human freedom and ecological sustainability" (254).

Marx's Ecology and Rift Analysis

By Alan Rudy

If the purpose of *Marx's Ecology* is to respond to environmental critics of Marx, inside and outside Marxism, I would argue that (as with Paul Burkett's *Marx and Nature*), John Bellamy Foster provides a useful corrective to the more vulgar or close-minded critiques. If the purpose is to show that Marx engaged in the development of ecological analyses, I find the book less useful, and not only because those analyses were not associated with an ecological politics. If the intent is to reassess the relative separation of, and separation of the evaluation of, social science and natural science in Western Marxism, I would argue that Foster throws the baby, communal conditions of production and the state, out with the bathwater, the silence in much of Western Marxism about natural science. Finally, if the purpose of the book is to broadly equate ecology with Marx and Foster's conception of "the metabolic rift," I would argue that this does a major disservice to ecology. The concept of metabolic rift, as I read it, has a far greater affinity for natural resource economics than the dialectics of ecological Marxism. I will focus my comments on the last two points, the silence on general communal conditions and the problematic equation of ecology and "rift analysis," as a means to evaluate Foster's rejection of Western Marxism.

Among other things, I will argue that the two flaws are necessary for one another in the structure of Foster's *Marx's Ecology.* The author rejects the critique of the reifications of late-19th and early-20th century scientism to be found in tracts such as *Dialectic of Enlightenment.*[1] Horkheimer and Adorno, Gramsci and others insisted on the importance of (spatio-political) difference, internal differentiation, and artistic social self-expression in the context of the critique of capitalist modernity.

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[1]M. Horkheimer and T. W. Adorno, *Dialectic of Enlightenment* (New York: Continuum, 1988).