

(RE)DISCOVERING MARX'S MATERIALISM

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John Bellamy Foster. *Marx's Ecology: Materialism and Nature*. New York: Monthly Review Press, 2000.

With *Marx's Ecology*, John Bellamy Foster has written the definitive account of Karl Marx and Frederick Engels's materialism. Its title notwithstanding, *Marx's Ecology* is far more than an account of Marx's thinking about nature. Marx's materialism is not contained within the critique of capitalism, Foster argues, but rather the other way around—it is Marx's critique of capitalism that is contained within a materialist view of history, constituted by the "materialist conception of history," on one hand, and the "materialist conception of nature" on the other. Far from either a mechanical or contemplative materialism, Foster argues that Marx forged a practical materialism grounded in an antiteleological conception of "evolution as an open-ended process of natural history, governed by contingency but open to rational explanation" (pp. 15-16). Above all, Foster insists that Marx's materialism suggests in the strongest terms possible a view of history that is "coevolutionary," constituted by "the mutual determination . . . of organism and environment" (p. 247). In so doing, Foster simultaneously renders a powerful critique of environmental studies, torn as it is between constructionist and anticonstructionist perspectives, and makes a signal contribution to the renewal of an activist materialist outlook that is at once historical and geographical, social and ecological.

Marx's Ecology defies the standard treatment of such weighty theoretical subjects. Writing a book that assumed "something of the character of a literary detective story" (p. viii), Foster has produced that rare theoretical study that is a joy to read. Written with the gracefulness and clarity of the best intellectual history—Isaac Deutscher's (1960, 1965) classic biographies of Trotsky and Stalin and Stephen Cohen's (1980) account of Nikolai Bukharin's life come to mind—*Marx's Ecology* is able to wed a virtually seamless narrative history with lucid theoretical exposition. In so doing, Foster brings his considerable talents as an interlocutor of Marxism (Foster, 1985, 1993, 1998) to bear on such seemingly far-flung topics as the ancient materialist philosophy of Epicurus, the debate over geological time in the 18th and 19th centuries, and the relevance of soil chemistry to Marx's critique of capital.

THE INFLUENCE OF EPICURUS AND DARWIN ON MARX

Two figures assume special importance in this account of Marx's materialism—the ancient Greek philosopher Epicurus and Charles Darwin. From Epicurus, Marx developed his critique of teleological explanations in natural and human history.

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From Darwin, Marx and Engels developed a distinctive theory of coevolution that accounted for the ways in which society shaped, and in turn was shaped by, the environment.

In one of many novel twists on the conventional story, Epicurus, not Hegel, emerges as the pivotal figure in Marx's early development. Marx's doctoral dissertation assumes decisive weight in this account, marking a significant (albeit incomplete) rupture with Hegel. Here, Foster argues against the "traditional interpretation" of Marx's dissertation (pp. 32-33, 51-65, 262, n. 30). Rather than contained within the idealist philosophy of the Hegelian system, as argued by Franz Mehring (1962) and David McLellan (1970), Marx's thesis aimed at recuperating an antiteleological materialism that (dialectically) "incorporated the activist element" of Hegelianism (p. 15). Formally, "the doctoral thesis pivoted on the differences between [Epicurus and Democritus on] the physics of the atom" (p. 52). These differences, however, "pointed beyond physics to epistemology" (p. 52) and thus to broader conflicts within European philosophy in the 18th and 19th centuries—between teleological and antiteleological perspectives, and especially between materialism and speculative philosophy. Building on Epicurus, Marx's emergent materialism denied neither the objectivity of nature, as Hegel did, nor humans' active relation to nature and to each other, as did the mechanical materialism of Francis Bacon, Isaac Newton, and others.

Epicurus prefigured the coevolutionary perspective that Marx and Engels would develop in subsequent decades. Three aspects of Epicurus's materialism were especially important for Marx. First, all divine intervention, direct or indirect, and thus all absolute determinisms, all teleological principles, were expelled from nature (p. 35). The very creation of the world, argues Epicurus, can be accounted for only by reference to the realm of chance, created by the "swerve" of the atom. The collision of atoms resulting from these swerving atoms—which themselves have "no cause" (p. 54)—allows for "a kind of freedom for rational organization of historical life, building on constraints first established by the material world" (p. 53). Second, his argument for the swerve is evidently premised on the objectivity of nature independent of human thought, in contrast to the Hegelian formulation. Yet Epicurus, contends Marx, went beyond a view that "reduce[d] thought to 'passive sensation'" (p. 55). Quite the contrary. Epicurus argued that "perception through the senses is only possible because it expresses *an active relation to nature*—and indeed, of nature to itself" (p. 55, emphasis added).

Third, this conception of the nature-society dialectic as driven by an active relation of humans to the environment (itself an internal relation of nature) was embedded in a sophisticated treatment of time. Prefiguring the historical geologists of the 18th and 19th centuries—who strongly influenced Marx as well—Epicurus argued for a conception of "deep time" (p. 46). "Central to Epicurus' view . . . was that life was born from the earth, rather than descending from the sky" (p. 39). Epicurus's notion of deep time applied not only to natural but also social history, identifying distinct periods of sociohistorical development from the stone through the iron ages. Even more significant for Marx's thinking was Epicurus's notion that "material existence . . . was . . . only evident through change, that is, evolution" (p. 40). The idea that evolutionary processes existed only through time—that is, in terms of emergence—would remain a cornerstone of Marx and Engels's dialectical method. For Marx and Engels, "Dialectical reasoning can thus be viewed as a necessary element of our cognition, arising from the *emergent, transitory* character of reality as we perceive it" (p. 232).

This interpretation underpins Foster's argument that Marx and Engels developed a "dialectical naturalism" (p. 229) that admits a dialectical approach to the study of nature as well as society, contra Georg Lukacs's (1972) contention that imposing the dialectical method on nature amounts to positivism (pp. 136-140). Hence, Marx's examination of Epicurus's dialectical treatment of time and evolution provided a much more thoroughgoing materialist foundation for subsequent investigations of human society.

Marx's doctoral thesis, argues Foster, shows that he was "ambivalent from the start" about the Hegelian system (p. 33). "Not only did Marx demonstrate an independence from Hegel in his very first literary work; he did so on the basis of an encounter with materialism, which was to have a lasting influence on his thinking" (p. 65). Still, the thesis was a "transitional work" that achieved only a partial rupture with Hegelianism. A more radical break with the latter awaited Marx's synthesis of his "growing concern with political economy" (p. 70) in the years immediately following completion of the dissertation (1841), and the German philosopher Ludwig Feuerbach's critique of Hegel from the standpoint of "naturalistic materialism" (p. 75). Marx's emergent critique of capitalism emphasized that "bourgeois society's . . . domination of humanity" rested on its "domination of the earth," especially in the form of large-scale landed property (p. 74). The double alienation of land and labor—always dialectically bound together—formed the basis of Marx's theory of alienation. Marx's political economy (political ecology?) of alienation was reinforced by Feuerbach's critique of Hegel. Where Hegel denied that nature had any "life of or development of its own," among other things leading him to reject evolutionary theories (p. 76), Feuerbach sought to bridge "the gap between philosophical criticism and natural science" (p. 71). Fully accepting naturalistic materialism (already implicit in his study of Epicurus), Marx argued that Feuerbach's conception was contemplative and therefore incapable of resolving the problems of alienation it posed. On this basis, Marx "proceeded to reject all purely philosophical solutions to estrangement" in favor of a *practical, activist* materialism (p. 78).

Darwin's theory of natural selection amplified Epicurus's critique of teleology, this time on the basis of natural history, thereby "annihilating the 'doctrine of final causes'" that had gained widespread currency as a conservative response to materialism's revolutionary implications in 19th century Europe (p. 192). Darwin explained the transmutation of species as the result of adaptation to, and simultaneous transformation of, the environment. Crucially, Darwin refused to admit any teleology, any "conception of progress" into this evolutionary theory: "The fact that environments could change radically, thus making an organism that was superbly adapted to its environment . . . no longer well adapted (actually driving it into extinction), in itself contradicted any simple notion of progression" (pp. 191-192). Darwin thus contributed to a distinctive, and underappreciated, aspect of Marx and Engels's materialism—the coevolutionary perspective.

Darwin's *The Origins of Species*, Marx wrote in 1860, "contains the basis in natural history for our view"; it "provides a basis in natural science for the historical class struggle" (p. 197). What on earth could this mean? Drawing especially on the first volume of *Capital* (Marx, 1867/1997), and Engels's *The Dialectics of Nature* (1940) and *Anti-Duhring* (1969), Foster argues that Marx and Engels shared with Darwin a view of history characterized by struggle, adaptation, transformation, and the dialectical interplay of organism and environment. Marx and Engels's great innovation was to take Darwin's conception of natural history, in which organism and environment alike are transformed, to comprehend human history as a

coevolutionary process. From this standpoint, human evolution, comprising natural as well as social history,

had to be traced through the development of tools. . . . This was because tools represented the development of human productive organs—the evolution of the human relation to nature—just as animal organs represented the instruments by which animals had adapted to their local environments. (p. 201)

In this way, Darwin helped Marx establish a basis in natural history for an original and “general theory of the role of labor . . . in the development of human society” (p. 202).

METABOLISM, THE METABOLIC RIFT, AND CAPITALISM'S UNSUSTAINABLE DEVELOPMENT

Binding together Marx's coevolutionary materialism with his critique of capitalism is the concept of metabolism (*Stoffwechsel*). In Marx's hands, this concept has a broad social meaning referring to “the complex, dynamic, interdependent set of needs and relations brought into being and constantly reproduced in alienated form under capitalism” (p. 158) and a more specific socioecological meaning that refers to material exchanges between nature and society. While stressing the dialectical relations between these two meanings, Foster focuses on the second.

Marx derived the socioecological rendering of metabolism from Justus von Liebig's pioneering work in soil chemistry, published in the early 1840s. Marx's conception centered on the relation between ecological cycles and social relations. Capitalism brought these two aspects into a contradiction that ensured worsening environmental crises. Socialism, in contrast, offers the possibility (nothing more) of sustainable development: Socialism makes possible the restoration of metabolic harmony but does not guarantee it.

The concept of metabolism illuminates relations at two geographical scales, corresponding roughly to Marx's distinction between the technical and social divisions of labor (Marx, 1867/1977, pp. 470-480). In the first instance, the labor process regulates the relation between the laborer and nature, which becomes a deeply alienated and unsustainable relation with the emergence of capitalism and the development of capitalist class relations. In this way, metabolism “provided Marx with a concrete way of expressing the notion of the alienation of nature (and its relation to the alienation of labor)” (p. 158). Outlined in *Capital*, Marx's conception of metabolism rests on the labor process, through which humans mediate and transform, yet never really control, nature. Consequently, under capitalism the degradation of labor and nature are inextricably (dialectically) linked. Far from a one-sided account, for Marx the historically specific interplay of capitalist class and metabolic relations promised not just degradation but liberation. Thus, “the concept of metabolism . . . allowed [Marx] to express the human relation to nature as one that encompassed both ‘nature-imposed conditions’ and the capacity of human beings to affect this process” (p. 158). Marx envisioned a future society of associated producers in which freedom in “the realm of natural necessity” (p. 159) is realized through the rational governance of the “human metabolism” (Marx, 1894/1981, p. 959, quoted on p. 159).

The metabolism of the labor process at once shapes, and is shaped by, the metabolism of the social division of labor. Transforming the division of labor between town and country, capitalism creates a rift in the metabolic relation between the

two: Nutrients flow out of the countryside and into the city and thence into rivers and waste dumps, never returning to the point of origin. In this way, the antagonistic relation of town and country disrupts nutrient cycling and undermines nature's capacity to regenerate.

In Marx's day, this metabolic rift manifested in growing concern throughout Europe and North America over declining soil fertility. Drawing our attention to these developments, Foster allows us to make great sense out of Marx and Engels's repeated calls, in *The Communist Manifesto* and elsewhere, for the abolition of the town-country division of labor as a basic condition of the transition to communism.

By locating capitalism's environmental contradictions in an evolving and expansionary town-country division of labor, Foster not only undermines established geographical conceptions of capitalism but calls into question any theorization of capitalism that ignores or marginalizes environmental history. This argument flows directly from Marx, who "made the concept of metabolism *central to his entire system of analysis* by rooting his understanding of the labor process upon it" (p. 157, emphasis added). Crafting a narrative that moves easily between socioecological and intellectual developments in the 19th century, Foster makes a strong case for seeing environmental transformations as endogenous to capitalist development. Here and elsewhere (see Foster & Magdoff, 1998), Foster argues that successive agricultural revolutions correspond to successive phases of capitalist development (Foster, 2000, pp. 148-149, 284, n. 20). This line of reasoning suggests that eohistorical crises play a role in forcing capital to develop new relations with (and on) the land and therefore are an important dialectical moment in world capitalist restructuring. Thus, the soil crisis in England and the northeastern United States in the second quarter of the 19th century (in some places even earlier) necessitated a second agricultural revolution that was bound up with the free trade in grain (after 1846) and the subsequent era of rapid agricultural expansion in the American West and other White settler colonies. Although borrowing the concept of agricultural revolution from English agricultural historians (Thompson, 1968) and citing Ellen Meiksins Wood's (1999) Anglo-centric rendering of agrarian capitalism (p. 284), Foster wisely ignores these scholars' provincial bias to illuminate the world-historical aspects of agroecological crisis in Marx's day.

Foster accomplishes two things in this recuperation of metabolism as a socioecological concept. First, he offers a powerful argument for the centrality of Marx's ecological perspective in his critique of capitalism, disrupting the hegemonic interpretation on the left, which regards Marx's ecological thinking as limited, for example, to agriculture (O'Connor, 1998), if not downright antiecological and Promethean (Benton, 1989). Second, Foster's conception of metabolism enriches and transforms both the critique of capitalism and the socialist project. Marx's insight that capitalism's metabolic contradictions determine and are determined by capitalism's social contradictions means two things: (a) The degradation of the soil and the degradation of the worker are mutually relational—one cannot exist without the other; (b) the liberation of the soil and the liberation of the worker are mutually relational—alienation can be resolved only through practice that simultaneously restores the general social metabolism *and* the socioecological metabolism to equilibrium. Thus, an authoritarian solution to ecological crisis is impossible. This important reconception of metabolism thereby avoids the problem of mechanism. For like materialism, metabolism is vulnerable to mechanical interpretations (examples include Fischer-Kowalski & Haberl, 1993; Wolman, 1965). Foster's innovation is to conceive the metabolism of nature and society as an active relation within which one can raise the question of freedom.

Marx's Ecology therefore presents a double challenge to the stages of capitalism literature. First, by revealing the world-historical character of capitalism's metabolic contradictions, Foster undermines theories of "capitalism in one country" (Wood, 1999), regardless of the degree to which they integrate ecohistorical dynamics into their analysis. Metabolic flows respect national boundaries no more than capital flows. Perhaps even less. Second, by challenging the accepted interpretation of Marx and arguing that metabolism is a foundational concept of Marx's entire system of analysis, Foster questions both national and world-historical perspectives on capitalist development, which (at best) treat environmental transformations as consequences and effects that may (or may not) factor into subsequent transformations of the capitalist system.

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