

O'Connor points out,²² represents the sine qua non of effective resistance against contemporary global capitalism.

The articulation of the traditional Marxist project with new social movements is, by contrast, conspicuous by its absence in Foster's account. The challenge facing Foster was to draw the political implications of Levins and Lewontin's dialectical conception of nature. By recognizing that, in the case of human beings, evolution is mediated through culture, these two thinkers implicitly pointed to the need of understanding the dialectical relation of human beings to nature through the concept of a socio-ecological totality. Thus in simply dismissing Lukács's and Western Marxism's contribution to the conceptualization of society as a dialectical totality, Foster missed the opportunity not only to further develop the theoretical project implicit in Levins and Lewontin's work but also to draw its full political implications.

A Materialism Worthy of Nature

By Joel Kovel

The ecological crisis cannot be properly approached unless the relations between humanity and nature are properly understood. In his important new work, *Marx's Ecology*, John Bellamy Foster argues that this must take place through an appropriation of *materialism*, specifically, the materialism of Karl Marx, who was, along with Darwin, one of "the two greatest materialists of the nineteenth century" (1). Foster's ambition is to extend the recognition of Marx's *historical* materialism, grounded in the primacy of production in human existence, into the domain of nature. Because Marx had as profound a grasp of natural science as of history, Foster argues that this expanded materialism is as authoritative a guide to ecological struggles as it has been to the struggles of labor.

As Marx got it right, there are those who got it wrong, that is, have placed ecology in a non-materialist framework. These Foster broadly categorizes as "greens." It is the purpose of *Marx's Ecology* to displace what Foster views as the currently influential green theories with a revived Marxist ecology incorporating natural as well as historical materialism. Thus:

²²James O'Connor, "Is Sustainable Capitalism Possible?" in Martin O'Connor, *op. cit.*

the aim [of this work] 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...led to the discovery of ecology (and more importantly socio-ecology) in the first place. Put differently, the goal is to transcend the idealism, spiritualism and dualism of much contemporary Green thought, by recovering the deeper critique of the alienation of humanity from nature that was central to Marx's work.... (19-20).

To Foster, Greens are not simply mistaken, but a serious menace, indeed, "the whole history of materialist approaches to nature and human existence" is under the threat posed by "contemporary Green thought." Green thinkers are said to attribute "the entire course of ecological degradation to the emergence of the scientific revolution of the seventeenth century," leading to "a crude rejection, at times, of nearly all of modern science, together with the Enlightenment and most revolutionary movements — a tendency that has fed into the antiration-alism of much of contemporary postmodern thought" (11).

From the indictment of Green "spiritualism," it follows that the growth of science/materialism entails the progressive detachment and devaluation of "spirit," and equivalently, notions of God, from conceptions of the universe. Thus, as science developed, "which came to be equated with the growth of materialism, God was dislodged from the material universe...." To Foster, "God in the view of modern science [has] no relation to the material universe" (13).

And not only modern science. One of the chief features of *Marx's Ecology* is the attention given to the post-Aristotelian philosopher Epicurus, about whom Marx wrote his doctoral dissertation, and for whom Foster has virtually unbounded admiration. In Foster's opinion, Marx turned to Epicurus (as against the idealist Hegel) for his fundamental philosophy of nature — and he did so because Epicurus was the originator of materialism, as expressed in his core belief that "nothing comes from nothing." To Epicurus, all material existence is a ceaseless rearranging of atoms. As he wrote, aligning himself with Democritus, reality ultimately consists of nothing but "atoms and the void."

There is much more than an intellectual position at issue here. Epicureanism was an intensely moral doctrine whose views on nature were subsumed into overcoming the fear of death — for once a rational person realizes that death was only a recycling of one's atoms, there is,

to the Epicurean, nothing left to fear.¹ Foster's intensely anti-religious attitude is anchored here. He sees Epicureanism as a signal triumph in the age-old struggle against religion, through its affirmation that "an understanding of nature and its laws, that is, the progress of science, would disperse terror inflicted by religion." [39]

A kind of syllogism may be abstracted from the above: Foster likes Epicurus because he finds in him confirmation of his own anti-spiritual materialism; Marx admired Epicurean materialism; logically, therefore, Marx's materialism must also be of the anti-spiritual, anti-religious kind.

To summarize, Foster's argument entails the following four theses:

- That "contemporary Green thought" is suffused with "idealism, spiritualism and dualism;"
- that Marx developed a materialism for his philosophy of nature which was perforce anti-spiritual (the same applying to historical materialism, the two being logically linked); and that it is this kind of materialism, therefore, which should be the guide for political ecology.

And, at a deeper, more systematic level,

- that spiritually driven thinkers cannot say anything interesting about matter and the philosophy of nature;
- and that the development of science entails a materialism grounded in the progressive despiritualization of the world, epitomized by the Epicurean ideal that reality consists of nothing but atoms and the void; and that within this, God has no relation to the scientific conception of the material universe.

All of these notions are false.

The first, about the anti-materialist, anti-scientific bias of Greens, is simply vacuous, insofar as Foster never bothers to prove it beyond the level of fiat. Not only does he fail to "highlight the weaknesses" of Green thinkers, he only makes one concrete reference to these enemies of science, and in that, he contradicts himself by highlighting the

¹As he said: "death is nothing to us." The position is developed at length in the famous Roman rendering of Epicurus, Lucretius, *On the Nature of the Universe*, trans. R.E. Latham, John Godwin, ed. (London: Penguin, 1994).

strength of the green position.² This is odd, considering how important he regards the critique of the greens to be. In any event, the Greens turn out to be mere rhetorical whipping-boys for Foster, and need not be discussed further here, however much they need to be taken up in a fuller treatment of these questions.

As for the other propositions, there is no difficulty in showing that Marx's historical materialism was quite hospitable to the spiritual dimension of existence, and that his materialism of nature, such as it was, was remarkably open as well to this dimension; furthermore, that spiritually oriented people, e.g., certain mystics, have had highly interesting things to say, "presciently," about nature; and finally, that a number of the greatest natural scientists were not only highly spiritual individuals, but integrated spirituality into their conceptions about matter and nature, that is, into their materialism.

Foster's errors are grounded in a misconception about the meaning of "spirit." We can infer (because, as with the Greens, there is no actual critique of the spiritual) that for him, to be "spiritual" is synonymous with what is anti-scientific, irrational and superstitious, and is merely a kind of rough congener for the pole of "idealism" in the classic materialism-idealism debate. He fails here to comprehend the distinction between spirit and religion, that spirit is an elementary property of being human, and that religions are the binding of spirit for the purposes of social cohesion. Therefore he also fails to appreciate that there is much more to spirituality than its religious elaboration, and much more to religions than their spiritual impulse.

²In the course of denouncing "greens" for their "Romantic, organicist, vitalistic, postmodern" hostility to modern science, Foster singles out their attack on Francis Bacon (whom he likes) for contributing to "the domination of nature" (11). This arguable but coherent view is then turned on its head in an endnote where, instead of disputing the green critique, he cites "a classic, brilliant example" of it, Carolyn Merchant's *The Death of Nature*, and praises its "profound critique of the mechanistic and patriarchal tendencies of much of seventeenth century science" — in other words, the only specific mention of a Green idea runs precisely opposite to the position he argues in the text (259, n32). This highly confusing passage becomes understandable in light of a strong tendency in *Marx's Ecology* to hand out credits to those upon whom, for whatever reason, Foster wishes to confer favor — in this case, perhaps, to a scholar who, however green, obliged with a jacket endorsement. It may be noted that the encomium, "great" appears, by my count, in at least 35 places in the text, placed next to names that Foster would like to have on his side.

Spirit is a dimension of human existence defined by the property of going beyond the socially constructed boundaries of the self. It is in tension with reality, therefore, insofar as reality is a social construct. This leaves room within spirituality for a great many mistakes, and also a great deal of destructiveness. But it also leaves room for a great deal of anticipatory and prefigurative experience, when, as often happens, the social construction of reality impedes the expression of human being. In these cases, the spirit-dimension can both anticipate a better life, and, crucially, provide a kind of mobilization toward attaining that life. There are two kinds of “better life” of interest here:

- where the existing state of affairs blocks freedom through one form of oppression or another; and
- where a kind of spiritual leap is needed in order to see beyond the established limitations of thought.

The first instance plays an important role in radical and revolutionary history, while the second instance plays an important role in the history of science. Marx was exquisitely aware of the first relationship, and incorporated spiritual awareness into historical materialism, doing so, it may be added, as an atheist. This is no contradiction, as there is nothing that says that spirituality need include a belief in a personal god, nor, certainly, the historically constructed gods of patriarchal religions. Needless to say, Marx (and Engels) despised religious obscurantism; how could any champion of human freedom think otherwise? But they did not confuse the repressive aspects of religion with the whole of religion. There is copious evidence that Marx and Engels took a view of religion far subtler, richer, and certainly more dialectical than Foster’s monotonous and obsessive rejectionism. The Marx who wrote that religion is the “soul of soulless conditions,” at the least took the notion of the soul seriously, as a form of protest against an atrocious world and a sign of struggle for a better one. He cannot be regarded as an anti-spiritual thinker, as Foster would demand of any proper materialist.³

³Or see Engels’ appreciative discourse on Thomas Münzer in *The Peasant War in Germany*, where he regards the Anabaptist rebels as the forerunners of proletarian revolutionaries. See also *Marx and Engels on Religion* (New York: Schocken, 1964) and of particular interest, Jose Porfirio Miranda, *Marx Against the Marxists* (Maryknoll: Orbis Press, 1980). The literature is vast, and entails the entire complicated development of liberation theology. The general relations of spirit and religion are treated in my *History and Spirit*, 2d ed.(Warner, NH: Essential Books, 1998).

From another angle, it can be argued that although he inveighs against it throughout his text, Foster's materialism is essentially of the mechanical kind, and as a result, a poor guide to developing a political ecology adequate to the current crisis. The mechanical character of Foster's materialism emerges as a reductive view of matter, connoted in his approval of the doctrine that nature is nothing but atoms and the void. This implies that matter lacks an *internally formative* principle, which, in Foster's hands becomes the pejorative term, a "vital force."⁴ In taking this stand, he allies himself willy nilly with the form of materialism that, in the sharp words of Alfred North Whitehead, saw nature as "a dull affair, soundless, scentless, colourless; merely the hurrying of material, endlessly, meaninglessly."⁵ As with the blanket rejection of spirit, there is a failure of dialectical vision, which confuses

⁴In a discussion of Justus Liebig, the soil scientist admired by Marx (and, properly, by Foster himself) we find that: "the material concept of metabolism was mixed rather inconsistently with the notion of 'vital force,' in which Liebig hearkened back to an earlier vitalism, identifying physiological motion, even mystical sources (imponderables) that could not be *reduced* to material exchange. Liebig's contribution here fed into a whole tradition of analysis that has been called 'vital materialism,' which tried to avoid mechanistic approaches to biochemistry." Much more to Foster's liking is the view that "metabolism" — a leading category through which the materialism of nature and that of humanity are interrelated — is "explicable *entirely* in terms of a scientific materialism emphasizing energetics (the conservation of energy and its exchange)." In other words, he espouses a reductive materialism along the lines of "atoms and the void" (160 italics added). Epicurus, it should be added, introduces a "swerve" undertaken by the atoms, which Foster associates with freedom, inasmuch as the motion of atoms is not determined. But this is at best a weak notion, which can be satisfied by Brownian movement.

⁵Alfred North Whitehead, "Science and the Modern World," in F.S.C. Northrop and Mason Gross, eds., *Alfred North Whitehead An Anthology* (New York: Macmillan, 1961), p. 412. The error, in Whitehead's view, lies in mistaken abstraction — a conception amenable to synthesis with Marx. Whitehead, needless to say, was no animist, which is also a misplaced abstraction. He expounded, rather, a "process" view of nature. Elsewhere, Whitehead writes of the European "fixed scientific cosmology which presupposes the ultimate fact of an irreducible brute matter...spread throughout space in a flux of configurations. In itself such a material is senseless, valueless, purposeless. It just does what it does do, following a fixed routine imposed by external relations which do not spring from the nature of its being. It is this assumption that I call 'scientific materialism.' Also it is an assumption which I shall challenge as being entirely unsuited to the scientific situation at which we have now arrived" (p. 378).

crude vitalism as well as crude religiosity with the more profound insight that nature intrinsically gives rise to form.⁶

Significantly, two other thinkers who do not agree with Foster's reductive view of matter are Marx and Engels. There is a remarkable passage in *The Holy Family* (also given over to praise of Francis Bacon, though unquoted by Foster) where we learn that:

Among the qualities inherent in matter, motion is the first and foremost, not only in the form of mechanical and mathematical notion, but chiefly in the form of an impulse, a vital spirit, a tension — or a “Qual,” to use a term of Jakob Böhme's — of matter. The primary forms of matter are the living, individualising forces of being inherent in it and producing the distinctions between the species.

Lest this be thought a youthful romanticism, it should be pointed out that Engels included the point again in his 1892 *Socialism Utopian and Scientific*, adding the gloss that the “mystic Böhme puts into the German word something of the meaning of the Latin *qualitas*; his ‘qual’ was the activating principle arising from, and promoting in its turn, the spontaneous development of the thing, relation, or person subject to it....”⁷

A “vital spirit” to matter, authorized by reference to the “mystic Böhme” — what is this world coming to! Yet the notion makes perfect sense in the context of historical materialism. Marx needs a natural-philosophic companion to his notion of the productive transformation of nature as the core of human nature. It follows that unless nature contains a kind of formative principle, inherent in matter, humans can have no organic relation to nature, and cannot be fully natural beings. I would speculate further that Marx and Engels were drawn to the qualitative aspect of Böhme's materialism, because of its intrinsic adaptability to the notion of use-value. As the domain of the qualitative, use-values are subordinated to exchange and, more generally,

⁶From another angle (and these issues can be no more than suggested within the confines of this essay) Foster never quite gets beyond the First Law of Thermodynamics, the conservation of matter and energy. There is also the Second Law, the entropy principle of the decay of form, the grand synthesis of which only makes sense in relation to the principle that nature generates form to be decayed.

⁷Karl Marx and Frederick Engels, *The Holy Family* (Moscow: Progress Publishers, 1975), p. 151; italics removed. Note the close parallel with Whitehead, cf, note 5.

to the quantitative reduction of the world essential to capital. Correspondingly, valorization of the qualitative is essential for any ecological socialism.⁸

A much more extended discussion would be necessary to clarify the enigmatic figure of Böhme (1575-1624) and the scientific and philosophical issues raised here. But it is certain that Jakob Böhme is not what Foster has in mind as a proper materialist, nor can his philosophy be remotely described as Epicurean. To the contrary, this cobbler from Görlitz in Germany has been described by Paul Buhle as “North America’s first philosopher of the green dream,” through his influence on Anabaptist settlers of Pennsylvania who were inspired by Böhme and built radically feminist, socialist and ecologically aware intentional communities.⁹

Jacob Böhme was the first, and perhaps the greatest, Protestant mystic. His works are excruciatingly difficult to read (or even to obtain) and have largely passed from the general view.¹⁰ Yet William Blake praises him in *The Marriage of Heaven and Hell*, and Hegel cites him as the fount of German dialectical philosophy. And his writings, gnarled and clotted with wild symbolic imagery, are full of the most audacious insights into matter and the cosmos, though remaining deeply Christian and outside the discursive practices of science.

How can this be? Because it is possible to obtain a true *insight* into nature, and hence construct one leg of a vital materialist philosophy, through reflection on lived experience — experience, that is, of an embodied and conscious creature whose being participates in the universe. Needless to say, insight of this sort in no way substitutes for the hard, patient verification of nature-in-itself that can be shared, transmitted and developed through the community of science. To put it metaphorically, a person does not walk on one leg. But an in-sight can orient others — as Marx saw something in Böhme’s notion of “Qual” that corresponded to and helped organize his incipient notion of a historical materialism grounded in struggle, sensuous practice and consciousness, by orienting it with an equivalently vital materialism of nature.

⁸See my, “The Struggle for Use Value,” *CNS*, 11, 2, June, 2000.

⁹Paul Buhle, “Jakob Boehme: A Gate into the Green World,” *CNS*, 7, 1, March, 1996.

¹⁰The most accessible introduction in English is in *Jacob Boehme: The Way to Christ*, trans. Peter Erb (New York: The Paulist Press, 1978). See also John Joseph Stoudt, *Sunrise to Eternity* (Philadelphia: University of Pennsylvania Press, 1957).

Böhme was able to transcend the split between flesh and spirit that had haunted Christianity. This came to him through the perception of a flash of light in the midst of a deep personal depression. Suddenly he saw all — but just as remarkably, held off from communicating his insight for years until the implications could work themselves through. What he came up with, and continually elaborated for the last decade of his life, were a series of visions into the basic structure of matter and the cosmos that had to remain merely spiritual and theosophic until the science of the 20th century could pose the questions anew.

Being “theosophic,” Böhme’s language was turned to speaking of nature as a manifestation of God. But in contrast to Foster’s narrow view, and however limited, this was not an idealist replacement of nature, rather, an intuitive and symbolic way of describing the awesomeness of nature that could stand in, so to speak, until the physics of general relativity and quantum mechanics could catch up to it. Böhme’s God is not some daddy in the sky, but the very unfolding of universal formativity. His genius was to realize that God itself had to come into being — formativity is itself formed from within nature. Böhme’s God does not create heaven and earth, It (though called “He”) is itself created from non-being — the “Unground” — in a process that bears an uncanny resemblance to the Big Bang of current cosmological theory.

We need not elaborate further. A study of Böhme by the French-Romanian quantum physicist Basarab Nicolescu illuminates a number of the issues.¹¹ Like Whitehead and many other natural scientists of the last century, Nicolescu has not been ashamed to use the language of spirit to speak about the awesome spaces into which science has led us. It is a question of seeing the real: words like “materialism” and “idealism” are only signposts crafted at a particular historical juncture to orient the direction in which to look; and by the very nature of things, which includes our own unfulfilled nature, this needs be a process of unending discovery. Thus the only valid materialism is an open one. To refer materialism back to authority, whether that of Marx or Epicurus, is to seek dogmatism and orthodoxy, not truth and certainly not liberation. Remember, it was Marx who called for “ruthless criticism” of everything existing, including one’s own views.

“If the doors of perception were cleansed every thing would appear to man as it is, infinite,” wrote Blake, some time before the coarse

¹¹Basarab Nicolescu, *Science, Meaning and Evolution: The Cosmology of Jacob Boehme* (New York: Parabola, 1991).

views of causality and matter deriving from our “Newtonian” life on the ground became sundered by the new science. “Atoms and the void” is, after all, a rather desiccated way of envisioning a quantum world where there is no longer a certain boundary between matter and space, on the one hand, and matter and mind, on the other. Just so does a kind of “god-talk” become serviceable under such circumstances — as it has been amongst the greatest of scientists whose privilege it was to break through the boundaries of the mechanical notion of matter.¹² To continue with Blake’s lines from the *Marriage*, “man has closed himself up, till he sees all things thro’ narrow chinks of his cavern.” What is now known of nature explodes these limits, even as the established science continually reimposes them.

What astounds about the quantum world is the dialectic between its absolute facticity, on the one hand, and its dissolution of the notion of a fact, on the other. The quantum realm may lie below the threshold of the electromagnetic/gravitational set of influences that determine the sensuous foundations of our being, but it is as secure as the laws of mechanics that enter into the building of a bridge, and for the same reason: the theory defines a set of practical operations integral to material life. In the words of a recent survey of the “quantum century” just completed, there exists “an astonishing range of scientific and practical applications that quantum mechanics undergirds: today an estimated 30 percent of the U.S. gross national product is based on inventions made possible by quantum mechanics, from semiconductors in computer chips to lasers in compact-disc players, magnetic resonance imaging in hospitals, and much more.”¹³

But if quantum mechanics is real, then its incomprehensible implications are real, too. For example, theory predicts and experiment confirms the radically counterintuitive finding that photons passing through a double-slit interference apparatus can be in two places at once; and, moreover, that “experimenters can choose, after the fact, whether the photon was in both places or just one.” The article continues:

¹²See Ken Wilber, ed., *Quantum Questions* (Boulder and London: Shambala, 1984), in which Nobel Laureates Werner Heisenberg, Ernst Schrödinger, Louis de Broglie, Wolfgang Pauli, and Albert Einstein, among other 20th century physicists deprived of the corrective of *Marx’s Ecology*, reveal themselves to be remarkably soft on God.

¹³Max Tegmark and John Archibald Wheeler, “100 Years of Quantum Mysteries,” *Scientific American*, February, 2001. Wheeler, Professor Emeritus at Princeton, was an associate of Niels Bohr in the 1930s and proposed this experiment in 1978.

The simple double-slit interference experiment, in which light or electrons pass through two slits and produce an interference pattern...was successfully repeated for ever larger objects: atoms, small molecules, and, most recently, 60-atom bucky-balls. After this last feat, Anton Zeilinger's group in Vienna even started discussing conducting the experiment with a virus. In short, the experimental verdict is in: the weirdness of the quantum world is real, whether we like it or not.

I should rather like it, as undermining the notion of discrete atomicity has powerful practical implications, particularly in the struggles over biotechnology. Capital's control over the genome rests on the assumption that the gene constitutes a kind of enduring subcellular atom, discrete, commodifiable, and suitable for the ideologies of biological determinism. Yet this notion has been thrown by recent work, as Evelyn Fox Keller puts it, "to the verge of collapse."¹⁴ From an extraordinary number of angles, capped off by the recent bombshell as to the paucity of genes in the human genome (which just might push the orthodoxy over that edge), it now appears that DNA, while essential to the organism, cannot be said to act as a linear transmission belt of genetic information. The reality (excuse the green expression) seems to be one of "holistic" determination, where the functionality of the cell (and the organism, and the society...) acts reciprocally on genetic function and structure, so that the notion of a discrete genic particle simply becomes incoherent.

The issue is not whether the counter-intuitive findings of quantum physics will play a role in unravelling the "mysteries of life," though it cannot be said that they will play no role, either, inasmuch as the latter can be played out at a level where quantum processes operate. Our present purposes are served, rather, with the realization that the materialism of brute matter that has reigned over Western science for 400 years has to be overcome, and not simply for intellectual reasons. The hopes for ecological transformation require a materialism of nature that may have been intuited by Marx, but remained scarcely developed by him, for sound historical reasons. We will never construct such an open and vital materialism, however, with an orthodoxy grounded in stale debates of 19th century science.

¹⁴Evelyn Fox Keller, *The Century of the Gene* (Cambridge: MIT Press, 2000), p. 69. See also, Mae-Wan Ho, *Genetic Engineering: Dream or Nightmare?* (Bath, UK: Gateway Books, 1998).

There is a great deal politically at stake in these seemingly abstruse reflections. If one believes that the future of ecological politics depends on a kind of “red/green” synthesis, then an open materialism serves this goal, while imposing orthodoxy forecloses it. I am not sure where Foster stands politically here, though reading *Marx’s Ecology*, with its contempt for Greens and high praise for the early ecological advances of the USSR, suggests that he would go the route, so to speak, on the old “red path.” Certainly his work has little resonance with the ferment of social movements and cultural forces that are becoming the subjects of the struggle for an ecological society, nor can it give an inkling as to why they have arisen and how they can be unified. Yet without them, the path toward ecosocialism will be a lonely one that will dwindle and lose its way, leaving behind only an empty tower of Marxism as its monument.

