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Review:

Marx's Ecological Saving Grace: His Materialism¹

John Bellamy Foster

CRITICISMS of Marx for his alleged anti-environmentalist views are commonly voiced today not only by liberals and Green thinkers, but also within the eco-socialist discourse that has arisen over the last two decades. Such criticisms have been levelled, often with little evidence to back them up, by such diverse figures as Leszek Kolakowski, Anthony Giddens, Ted Benton, Michael Redclift, Robyn Eckersley, Kate Soper and Alain Lipietz. In an article recently published in the eco-socialist journal *Capitalism, Nature, Socialism*, Lipietz, a leading representative of the French regulation school, declared that Marx underestimated 'the irreducible character of ... ecological constraints' and adopted 'the Biblico-Christian ideology of the conquest of nature.' At the same time he insisted that Marx tended to reduce 'the natural history of humanity to the transformative activities of men,' thereby ignoring nature's own 'ecoregulatory activities' (a criticism first raised by Benton). Finally, Marx is faulted for claiming that 'nature is the inorganic body of man,' and ignoring that it is 'just as well that of the bee or the royal eagle.' For

¹ *Ecology and Historical Materialism*, by Jonathan Hughes (Cambridge: Cambridge University Press, 2000), 219 pp., \$59.95 (hardback), \$22.95 (paper).

Lipietz, then, Marx is unaware of or downplays ecological dependence, ignores nature's role in production, and adopts a militant anthropocentric approach to nature that glories in its conquest. These points are used to back up his claim that 'the intellectual scaffolding of the Marxist paradigm, along with the key solutions it suggests, must be jettisoned.'²

Lipietz apparently sees no need to provide any detailed reading or rereading of Marx's texts to support his contention. Nothing beyond bald assertion (and reference to Benton's work) is provided to back up his views. He simply relies on the sense of certainty (or prejudice) provided by a given canonical reading of Marx, mostly derived from the now dormant French structuralist Marxist tradition. Yet, it is now known, if it was not fully acknowledged earlier, that Marx wrote extensively about human-nature relations. A considerable body of research has arisen in recent years that explores Marx's ecological thought, and which seeks to build on his contributions to explore current ecological problems.³ This being the case, there is every reason to doubt those criticisms of Marx that rely simply on pre-existing prejudices – i.e., the accepted canonical reading dating back to a time when most Marxists (like most everyone else) were oblivious to ecological concerns – while avoiding any genuine engagement with Marx's texts.

Ecology and Historical Materialism by Jonathan Hughes stands out as a notable contribution to the growing body of work that seriously tackles the question of Marx's approach to ecological questions. Hughes's book evolved out of a doctoral thesis and belongs generally to the tradition of analytical Marxism, with its skepticism regarding all dialectical reasoning. (Within analytical Marxism Hughes work owes much more to

² Alain Lipietz, 'Political Ecology and the Future of Marxism,' *Capitalism, Nature, Socialism*, vol. 11, no. 1 (March 2000), pp. 74-75.

³ See, for example: Howard Parsons, ed., *Marx and Engels on Ecology* (Westport, Conn.: Greenwood Press, 1977); Paul Burkett, *Marx and Nature* (New York: St. Martin's Press, 1999); John Bellamy Foster, 'Marx's Theory of Metabolic Rift: Classical Foundations for Environmental Sociology,' *American Journal of Sociology*, vol. 105, no. 2 (September 1999), pp. 366-405; John Bellamy Foster, *Marx's Ecology: Materialism and Nature* (New York: Monthly Review Press, 2000); Fred Magdoff, John Bellamy Foster and Frederick H. Buttel, ed., *Hungry for Profit: The Agribusiness Threat to Farmers, Food and the Environment* (New York: Monthly Review Press, 2000).

the strand associated with G.A. Cohen than that associated with Jon Elster – that is, Hughes does not go so far as to embrace methodological individualism.) The strength of analytical Marxism, at least with respect to the question of Marx and ecology, is that this tradition does not rely on any pre-existing canon (particularly in an area where that canon is likely to be defective), but seeks to answer questions directly, through the close analysis of the texts. The weakness of analytical Marxism even at its best, is that it tends to fragment Marx's system, denying the concept of totality intrinsic to dialectical thought. Not surprisingly, then, its scrutiny of the texts is usually confined to a handful of paragraphs, from which logical-analytical principles are derived, while the larger corpus of Marx's thought, and its historical background and development, is for the most part ignored. Hughes's book, to its credit, displays the strengths of the analytical Marxist tradition, at its very best. At the same time, the insights that his work provides into the question of Marx's ecology are limited by the parameters set by the analytical Marxism that it only partly transcends.

This being said, it is the strengths of Hughes's elegantly argued work that chiefly concern me here. *Ecology and Historical Materialism* can be seen as consisting of three parts. The first part (the introduction and chapters one and two) consist of a broad review of the literature on ecology and society. The second part (chapters 3 and 4) situates Marx within this literature by demonstrating that the notion of ecological dependence is a key axiom of Marx's materialism. The third part addresses the question of whether Marx's emphasis on the expansion of the means of production under capitalism and his treatment of human needs conflicts with an ecological world-view.

The opening chapter of Hughes's work is devoted to explaining what ecological problems are and reviewing the literature in this respect. The significance of this chapter lies mainly in its concluding sections which addresses the issue of the ecocentric-anthropocentric divide that dominates the literature on environmental ethics. In the deep ecology tradition, in particular, we are often presented with a stark choice: either we are anthropocentric and believe in the domination of nature for narrow, human, instrumental ends, or we stand for nature itself as having an equal or greater right to existence *vis a vis* human beings. Hughes attempts to shift the discussion by arguing, following Reiner Grundmann and others, that a distinction needs to be made between narrow,

instrumentalist anthropocentrism and a broad anthropocentrism.⁴ Although a consistent ecocentric perspective is almost impossible to maintain (how can we think like a mountain or a blade of grass?) the same is not true of a broad anthropocentrism. The latter perspective, which is a distinctively human perspective, values nature not simply for instrumentalist reasons, but also incorporates a notion of the intrinsic value of nature, including its aesthetic qualities. Such a viewpoint is grounded in the recognition that as human beings we too are a part of nature. A broad anthropocentrism of this kind, Hughes (again following Grundmann) argues, would not abandon the idea of the domination of nature as such, since a society that fails to dominate nature is necessarily failing to meet human needs and interests; hence a society that generates ecological problems can hardly be said to be dominating nature at all.⁵ Hughes goes on to argue that Marx's approach was that of such a broad anthropocentrism, which grounds the value of non-human nature in

... its contribution to the value of human lives, but which unlike its narrow counterpart does not view that contribution solely in instrumentalist terms. (p. 32).

The next logical step in Hughes's analysis is to address the issue of natural limits, through a critique of 'green Malthusians.' Malthus is often portrayed as the premier theorist of natural limits, and hence as the first modern environmental thinker. Marx, in contrast, partly due to his opposition to Malthus, is often seen as a thinker who denied the existence of natural limits. Hughes provides a realistic view of Malthus's population doctrine, that shows the very restricted basis of the argument (which assumed that food could not be increased except in a fixed amount equal at most to the maximum level of food production in his day). Moreover, he recognises that Malthus's argument was entirely a class argument, opposing even the most modest provisions for the poor. Despite Malthus's assumptions of only very limited improvement of the soil, crops and livestock (an assumption which he never explained) and limited

⁴ Reiner Grundmann, *Marxism and Ecology* (Oxford: Oxford University Press, 1991).

⁵ Although this argument has much to be said for it, I for one would be hesitant to use the term 'domination' in this context. At most it comes down to Bacon's famous credo that we can only master nature by following its laws.

availability of the land, there is little in his thought that could be considered ecological. Indeed, he argued that raw materials were infinite in their availability.⁶ Hence, Hughes rightly describes the contemporary work of neo-Malthusians, such as Paul Ehrlich and Garrett Hardin, as 'the environmentalist appropriation of Malthus' (p. 40).

Malthus had sought to provide naturalistic laws for agricultural productivity and population growth, which in reality were historically conditioned. Marx's critique of Malthus focused on precisely on this point. Hughes differs sharply from Ted Benton's influential argument, which claimed that Marx in his critique of Malthus largely rejected the idea of natural limits. Rather Hughes explains that Marx and Engels always accepted abstract absolute natural limits, but also insisted that the limits imposed by nature were rarely experienced in such absolute form, but rather in ways that were concretely affected by the level of development of the productive forces, the extent of scientific knowledge, etc. As Marx said in the *Grundrisse*, what constituted overpopulation in ancient Athens is quite different from what constitutes overpopulation once capitalism has developed.⁷

The view of population that Marx and Engels provided, Hughes notes, has much more in common, than in the case of Malthus, with that of modern demographers, who point to the democratic transition that occurs with economic and social development, leading to a drop in fertility rates. Hughes also alludes to the fact that Marx saw the problems of soil degradation, engendered by capitalist production, as a crucial issue. Marx wrote to Engels in August 1851 that without reforms in agriculture 'Father Malthus will turn out to be right.' Yet, Marx's concerns about natural limits within agriculture and how they were mediated by social relations, went far beyond those of Malthus. Malthus did not live to see the revolution in agricultural chemistry that began with the publication in 1840 of Justus von Liebig's *Organic Chemistry in its Application to Agriculture and Physiology*. Liebig was to pioneer in an ecological critique of British high farming that was to have an enormous influence

⁶ See the analysis in my article, 'Introduction to Bicentennial Symposium on Malthus' *Essay on Population*, *Organisation & Environment*, vol. 11, no. 4 (December 1998), p. 431.

⁷ Karl Marx, *Grundrisse* (New York: Vintage, 1973), p. 606.

on Marx's conception of ecological and social limits in this realm, leading to his own theory of the metabolic rift in human-natural relations.⁸

Beginning with chapter three on 'Marxism and the ecological method,' it is Marx's analysis itself, rather than environmental thought more generally or Malthus, which is the principal concern of Hughes's book. Here Hughes employs the concept of 'metaphysical ecology,' drawn from the work of Andrew Brennan, to describe the dominant tendency of much of contemporary eco-philosophy. For Brennan ecology has increasingly been split into 'scientific' and 'metaphysical' branches. Scientific ecology is concerned primarily with 'interactions among organisms ... and between organisms and the environment.'⁹ Metaphysical ecology, in contrast, encompasses far more than the relation of organisms to their environments, evoking concepts of interdependence and holism, and frequently embracing, teleological, idealist and spiritualistic conceptions. Marx and Engels have often been accused by their green critics, Hughes notes, of having adopted the position of mechanistic, reductionist science, which accounts for their supposed ecological sensitivity. Yet, Hughes argues that they were materialist without being reductionist, and that, while avoiding idealism and the weaknesses of metaphysical ecology, they nevertheless embraced a perspective that was better able than that of the metaphysical ecologists themselves to explore issues of interdependence and holism – and on a scientific basis.

Still, there is something deeply ambiguous about Hughes's discussion at this point. He seems on the verge of attributing this quality of comprehending the interdependent and the holistic, while not losing sight of historical and material relations, to the dialectical character of Marx and Engels's thought. Indeed, he refers to Engels's dismissal of mechanistic materialists as non-dialectical, and says that in Engels's treatment of the 'dialectical 'law' of the transformation of quantity into quality, was to be found an endorsement of the doctrine of emergent properties' (which of course is one way of understanding dialectic as Bhaskar has shown). But all of this sits uncomfortably with the analytical Marxist tradition that frames Hughes's analysis. Hence, the argument

⁸ I have explained Marx's method in this respect at considerable length in 'Marx's Theory of Metabolic Rift', and *Marx's Ecology*.

⁹ Andrew Brennan, *Thinking About Nature* (Athens: University of Georgia Press, 1988), p. 31.

focuses instead on using G.A. Cohen's treatment of the base-superstructure argument to demonstrate that Marx was neither reductionist nor mono-causal in his analysis, leaving the question of Marx's capacity to explore complexity and interdependence, largely unanswered. More peculiar still, Hughes makes what can only be considered a major digression at this point to confront Jon Elster's methodological individualist interpretation of Marx.

Thus it is chiefly in chapter four of his book, entitled 'Historical Materialism: Locating Society in Nature,' and not in the previous chapter on 'Marxism and the Ecological Method,' that Hughes provides his important methodological observations regarding Marx and ecology. Hughes ends up arguing that Marx's materialism extended beyond mere practical materialism, and embraced naturalistic elements, specifically the notion of ecological dependence. Here he is influenced by the views of Sebastiano Timpanaro in *On Materialism*, who had insisted that Marx's materialism, unlike that of most of contemporary Marxists, did not treat nature primarily as a social construction.¹⁰

Hughes's treatment of the question of materialism is elusive. He seems to be completely unaware of the history of philosophical materialism; of Marx's own discussion the origins of materialism; of the recent treatment of the subject by Bhaskar, etc.¹¹ Instead he defines philosophical materialism, in the crudest, most reductionist way, as the view that 'all that exists is matter.' He then tells us that Marx could not have been a philosophical materialist because he saw commodities 'as having a 'non-material or "supra-natural" property, namely value.' Hughes thus seems to be operating under the double misconception that a rational materialism denies the reality of ideas, and that Marx believed that value was to be interpreted as a "supra-natural" property' – rather than a product of bourgeois society and ideology, and thus rooted in material conditions.

So hesitant is Hughes, when faced with the question of Marx and philosophical materialism – not altogether surprising since such views have long been considered unacceptable within Western Marxism – that he claims that Marx adopted a 'cluster of materialist explanations,' but

¹⁰ See Sebastiano Timpanaro, *On Materialism* (London; Verso, 1975).

¹¹ See Marx and Engels, *Collected Works*, vol. 4, pp. 124-26; Roy Bhaskar, 'Materialism' in Tom Bottomore, ed., *A Dictionary of Marxist Thought* (Oxford: Blackwell, 1983).

does not tell us at all what this 'cluster of explanations' consists of. Marx's materialism was broad enough, we are informed, to embrace the notion of ecological dependence (as well as ecological inclusiveness, the idea that human beings are a part of nature). But as to what this expanded notion of Marx's materialism really amounts to (aside from these bare postulates) Hughes offers scarcely a clue.

Nevertheless, Hughes's contention that Marx's saving ecological grace was his materialism – that it was this that allowed Marx to embrace the concept of ecological dependence even at a time when ecological thought was undeveloped – is an important observation.¹² It is here that the main revelations of his book are to be found. Hughes emphasises certain passages in Marx's thought that lend support to his contention that notions of ecological dependence were present throughout Marx's work, and played an integral role in his theory. In particular, he refers to Marx's reference to nature as 'the inorganic body of man' in the *Economic and Philosophical Manuscripts of 1844*, to Marx and Engels's contention that the struggle for subsistence conditions human material existence in *The German Ideology*, and to Marx's definition of the labour process as a metabolic relation between human beings and nature in *Capital*, vol. 1. Hughes thus agrees with Howard Parsons, Ted Benton and Peter Dickens in arguing that Marx recognised the reality of ecological dependence, and that this was traceable, at least in part to his materialism. But Hughes makes a much a stronger case for this than Benton, who says that Marx is inconsistent in this respect, or Dickens who (at least when he wrote *Society and Nature*) gives the impression that Marx's sensitivity to ecological issues is disproportionately confined to his early work.¹³ Hughes sees Marx as following a consistent pattern throughout his writings in this regard, although there are considerable variations in the way this is expressed in his early and his later works:

¹² This same thesis, that Marx's ecological saving grace was his materialism, which led to the development of an ecological dimension in his analysis, lies at the heart of my own book, *Marx's Ecology*, referenced above.

¹³ In his most recent writings Dickens has acknowledged the extent to which Marx's work was ecological in its 'mature' phase as well. See Peter Dickens, 'Marx and the Metabolism between Humanity and Nature' *Aletheia*, vol. 3, no. 2 (November 2000), pp. 40–45.

... corresponding perhaps to a shift from general statements of human-nature relations to more concrete analysis of particular interactions between humans and non-human nature' (p. 97).¹⁴

Hughes also questions Benton's critique of Marx for failing to take into account what he terms 'eco-regulatory' processes within production. In Benton's argument, Marx's analysis of the labour and production process does not take into account the fact that in some forms of production, such as agriculture, the process is regulated largely by ecological rhythms in which human beings play a secondary role. It therefore does not fit with Marx's abstract concept of the labour process. Hughes, however, argues that Marx's abstract concept allows for flexible application to different spheres of production, and that Benton is expecting 'too much from a general concept' (p. 107). Hughes might have usefully added that Marx does consider eco-regulatory processes very extensively in volumes 2 and 3 of *Capital*, particularly in his lengthy treatment of agriculture.¹⁵ Hughes does, however, answer Benton's claim that Marx's concept of production does not allow for sustainability – by pointing to Marx's famous statement in volume 1 on the robbing of the soil's fertility. Hughes quite rightly connects Marx's theory here to the question of sustainability, but apparently does not perceive the full depth of Marx's argument or the extent to which he took it (particularly in volume three of *Capital*), explicitly incorporating the criteria of sustainability into his critique of capitalist production.¹⁶

Hughes's contention that Marx's ecological saving grace is the broad basis of his materialism, which incorporates the notion of ecological dependence, puts him directly in conflict with what he calls 'the idealist interpretations of historical materialism,' represented by 'left idealists' such as Leszek Kolakowski and Alfred Schmidt, who interpret Marx as a

¹⁴This point on the increasingly concrete and scientific character of Marx's ecological observations has been developed more concretely in John Bellamy Foster and Paul Burkett, 'The Dialectic of Organic/Inorganic Relations: Marx and the Hegelian Philosophy of Nature,' *Organization & Environment*, vol. 13, no. 4 (December 2000), pp. 403-25.

¹⁵For a much more thoroughgoing critique of Benton's argument than that provided by Hughes, see Paul Burkett, 'Labour, Ecoregulation and Value', *Historical Materialism*, no. 3 (1998), pp. 119-44.

¹⁶See Foster, 'Marx's Theory of Metabolic Rift', pp. 383-90.

radical constructionist and deny the existence of a notion of ecological dependence in Marx. Hughes criticises Kolakowski in particular, who complains of a 'Promethean motif' in Marx shown by the

... lack of interest in the natural (as opposed to economic) conditions of human existence, the absence of corporeal human existence in his vision of the world.¹⁷

Hughes replies that:

this assertion is puzzling in the light of passages quoted earlier, in which Marx highlights the very issues that Kolakowski accuses him of ignoring' (p. 101).

The only rational explanation for Kolakowski's position, in light of Marx's many discussions of natural conditions, according to Hughes, is to be found in Kolakowski's related contention that Marx denies philosophical realism – the existence of a natural world independent of human consciousness. Yet, there is absolutely no evidence to be found in Marx, Hughes rightly answers, that in any way

... implies the denial of a reality independent of human consciousness, asserted by Kolakowski. It is true that in his comments on Feuerbach Marx highlights the extent of human transformation of nature rather than its preconditions or limits, but this is to counter what he sees as the weakness of Feuerbachian materialism: its tendency to see humans as passive products of their circumstances and to forget 'that circumstances are changed by men.' Elsewhere ... Marx chooses to highlight the other side of the relation. (pp. 101-02).¹⁸

Hughes likewise criticises Alfred Schmidt's *The Concept of Nature in Marx* for its idealist tendencies. It is true, he acknowledges, that Schmidt does seem to recognise in places the independent existence of nature and human dependence on nature. Nevertheless, he employs, we are told, 'idealist language' and is 'at best obfuscatory.' On the face of it this is

¹⁷ Leszek Kolakowski, *Main Currents of Marxism*, vol. 1 (New York: Oxford University Press, 1978), p. 413.

¹⁸ For a closely related treatment of Kolakowski's position on Marx and nature see my review 'Marx's Ecological Value Analysis', *Monthly Review*, vol. 52, no. 4 (September 2000), pp. 39-41.

not a very impressive critique of Schmidt. But Hughes's argument is open to further development. The intent of his criticism here seems to have been more fully conveyed recently by Noel Castree in *Capital & Class*. Schmidt, according to Castree, deontologised nature, arguing that it hardly existed in itself, but had to be viewed from a radical social constructionist standpoint, which he associated with Marx. As Castree observes:

This is not to say that Schmidt was anti-naturalist: on the contrary, he did not reject the notion of a non-social or pre-social nature altogether. However, his point was, first, that such a nature can only be conceived through social categories, and second that 'Marx ha[d]...virtually nothing to say about this nature-in-itself because nothing *can* be said beyond the bare posit.' In this sense, Schmidt's naturalism was present but very muted. Indeed, ultimately it was *so* muted as to be altogether squeezed out by a social constructionism in which capitalism is seen as responsible for remaking nature anew.¹⁹

If such left idealist interpretations of Marx are misleading, Hughes also finds it necessary to combat views that attempt to restrict Marx's materialism to narrow technical and economic limits, excluding any connection to nature. Here Hughes considers Cohen, whose analysis centres on the base-superstructure metaphor, to be the most formidable defender of the narrow conception of Marx's materialism. Cohen argued that Engels was wrong in asserting (in his speech at Marx's funeral), that in emphasising that human beings have to eat first, and thus to struggle for their subsistence, Marx was laying out the groundwork of a materialist point of view. For Cohen there is no necessary connection between this and the logic of the base-superstructure argument. Hughes counters that Cohen's criticism of Engels is only meaningful if one follows Cohen in seeing materialism in *narrow* terms that relate only to the economic base and superstructure metaphor. Once one embraces a *broader materialism*, that recognizes human dependence on nature, as underpinning Marx's

¹⁹ Noel Castree, 'Marxism and the Production of Nature', *Capital & Class*, no. 72 (Autumn 2000), p. 15. For a more thoroughgoing critique of Schmidt's work see Paul Burkett, 'Nature in Marx Reconsidered: A Silver Anniversary Assessment of Alfred Schmidt's *Concept of Nature in Marx*', *Organization & Environment*, vol. 10, no. 2 (June 1997), pp. 164-83.

world-view, Engels's argument makes perfect sense. One way of arguing this – though not employed by Hughes himself – is to say that the materialist conception of history depends on (and is inextricably connected to) the materialist conception of nature.²⁰

It is often argued that since Marx lauded the development of the productive forces (most conspicuously in Part One of *The Communist Manifesto*) he necessarily adopted an anti-ecological and 'Promethean' standpoint. Such criticisms are an outgrowth of the old 'limits to growth' and techno-phobia perspectives that have often characterised the Green movement. What these simplistic views ignore is that the issue is not simply one of production, or economic growth, but *sustainability* (and sustainable development), which raises all sorts of complex and controversial issues, but nevertheless means that there is no one-to-one relation between the expansion of production and the degradation of the environment. Similarly, technological developments, while most often designed to pursue other ends than ecological ones (in capitalist society, the pursuit of surplus value), cannot be seen as invariably harmful to the environment, and can actually be designed to decrease environmental impact (for example, a switch to solar power).

Today the question then becomes did Marx address issues of sustainability and soft technological paths? Hughes hints that the answer to the former is yes, while arguing that there is nothing in Marx's argument that excludes the latter. In fact, a stronger case can be made for both of these aspects of Marx's analysis, than Hughes is prepared to advance. Marx referred numerous times to sustainability conditions: that is, the handing down of nature in a non-degraded (and indeed 'improved') condition to future generations, and even made it clear that this was a precondition for the a society of associated producers. Moreover, though it is frequently assumed that Marx had nothing to say about soft technological paths, he was a strong critic of the attempt to bridge the metabolic rift between human beings and nature through the importation of fertilisers (including synthetic fertilisers), which already characterised British high farming in Marx's day. Instead, Marx suggested that the rift

²⁰ This approach is developed at length in my book, *Marx's Ecology*. The term 'materialist conception of nature' comes from Engels himself. See Engels, *Ludwig Feuerbach and the Outcome of Classical German Philosophy* (New York: International Publishers, 1941), p.67.

between city and country, which made such 'high farming' necessary should be lessened, by a more 'even dispersal of population' (see *The Communist Manifesto*), and attempts to alleviate the alienation from nature. In our day, this would be seen as a soft technological path, conducive to organic farming.²¹

Hughes's chief way of approaching the issue of technological paths, however, is less direct, taking the form of a long, laborious confrontation with Cohen's discussion of productive forces, based on several lines from a single paragraph in Marx's 1859 Preface to *A Critique of Political Economy*. The upshot of this extended argument is that there is nothing in the logic of Marx's account of the development of the productive forces which disallows amelioration of ecological problems. Although Hughes fails to provide any concrete, operational evidence to illustrate this from Marx's analysis itself, one could easily point to Marx's injunction that production had to be designed so as to emphasise the 'reduction and re-use' of waste, for both economic and ecological reasons.²² Thus it is not simply the quantitative expansion of the means of production, but also their qualitative form, which is of importance.

Hughes finishes up his analysis with a consideration of human needs. Here, as in the case of production, the issue is whether Marx's theory allows for a qualitative dimension. Hughes argues that it does. Marx saw human needs as encompassing (beyond basic needs) individual self-realisation and a wealth of qualitative relationships (independent of mere physical abundance). In these terms, environmental conditions are clearly a crucial consideration. Moreover, Hughes points out how Marx insisted on the rational regulation of the human relationship to nature, as a defining characteristic of a society of associated producers.²³

In the end, looking back, *Ecology and Historical Materialism* reads like an abstract proof. Hughes has demonstrated that historical materialism left room for, and even included as a necessary element, an

²¹ See Fred Magdoff and John Bellamy Foster, 'Liebig, Marx and the Depletion of Soil Fertility: Relevance for Today's Agriculture,' in Magdoff, Foster and Buttell, ed., *Hungry for Profit*, pp. 43-60.

²² Karl Marx, *Capital*, vol. 3 (New York: Vintage, 1981), pp. 195-97.

²³ For a more developed analysis of Marx's theory of needs and its relation to ecology see Burkett, *Marx and Nature*, pp. 163-72, 239-57.

ecological component. Moreover, he has convincingly argued that this is tied in some way to Marx's broader materialism. But Hughes seems unaware of the full extent of the revolution in the conception of historical materialism that his reading of Marx demands. If it is true that Marx's historical materialism is based on a broader materialism encompassing a much deeper ecological perspective, then the prevailing interpretation of Marx's work and of the Marxist tradition as a whole needs to be reconsidered from the beginning in all of its aspects. In other words, once Marx's materialism is no longer seen simply in economic and technological terms (or even simply in terms of praxis) but also encompasses a naturalistic component (embracing even philosophical materialism to some extent), then the question of what constituted Marx's theory, and how deeply embedded were the ecological concepts within it, ultimately needs to be addressed.

It may turn out that in attempting to address such issues Hughes's analytical Marxism will prove to be more a hindrance than a help. By implicitly denying the primacy of the base-superstructure metaphor, through a broadening of materialism, while at the same time rejecting methodological individualism, Hughes has left analytical Marxism, which has been heavily dependent on these methodological approaches, in a difficult position. At the same time, the questions that he raises about Marxism, materialism and ecology are not easily answered from this perspective, since these questions can only be answered historically and dialectically – that is, in terms of their emergence – an approach not favoured within analytical Marxism.

Yet, whatever the significance of Hughes's study for analytical Marxism, the fact remains that Hughes, as a representative of that tradition, has made an important contribution in establishing: (1) that Marx's methodology is rooted in a broad anthropocentrism (rather than narrow anthropocentrism, i.e., instrumentalism), (2) that it does not deny the existence of natural limits, (3) that it is rooted in a concept of ecological dependence, (4) that this derives from a much broader materialism than is often supposed, and (5) that both the development of the productive forces and the satisfaction of needs have to be understood in qualitative terms, which necessarily include ecological elements. These are important observations. They demonstrate that Marx's analysis is fully compatible with an ecological world-view. Hughes's study should therefore contribute to a broadening of Marxism both as a theory and a

practice. In sharp contrast to those like Lipietz who argue on putatively ecological grounds that 'the intellectual scaffolding of the Marxist paradigm, along with the key solutions it suggests, must be jettisoned,' Hughes's analysis brings out the strengths of Marx's method, and the need to extend rather than contract (or to 'jettison') its fundamental insights.