Contemporary Marxism has responded in a number of ways to the challenge posed by ecology. Broadly speaking, three currents of thought can be distinguished.* The first I shall call the ‘Marxist dissident’ response. Its proponents have abandoned central elements of Marx’s theory, claiming that the new questions posed by ecology cannot be solved within its theoretical framework. The most prominent author here is Rudolf Bahro.\(^1\) Opposed to this group we find a tendency which aims to defend central elements of that theoretical corpus. I shall call this current ‘Marxist orthodoxy’\(^2\). Between them we can locate a third group of authors who think that ecology in fact presents a serious challenge to Marxism, but who are at the same time convinced that ready-made answers are contained within Marx’s thought. This position suggests that Marx himself was a Green, albeit a Green *malgré lui*. I think this position amounts to wishful thinking.\(^3\) Ted Benton recently advanced in these pages a reconstruction of historical materialism which incorporates an ecological dimension.\(^4\) His attempt avoids the pitfalls and

The Ecological Challenge to Marxism

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lacunae of all the above-mentioned approaches. He asserts that ‘there is much in the overall corpus of Marxian historical materialism which is readily compatible with an ecological perspective.’\(^5\) But he also aims to show that historical materialism has to be reformulated and reconstructed. His main concern is to emphasize that Marx, and Engels, did not sufficiently consider the limits that nature imposes on the development of humanity and society.\(^6\) Marx’s conception, according to Benton, ‘exaggerate[s] the potentially transformative character [of productive labour processes] whilst under-theorizing or occluding the various respects in which they are subject to naturally given and/or relatively non-manipulable conditions and limits.’\(^7\) This, according to Benton, is the main reason for the paradox that ‘the basic ideas of historical materialism can without distortion be regarded as a proposal for an ecological approach’,\(^8\) while at the same time there exists ‘so much bad blood between Marxists and ecologists’.\(^9\) Benton’s solution to the paradox emphasizes an ambiguity within Marx’s thought: ‘My central argument is that there is a crucial hiatus between Marx’s and Engels’s materialist premises in philosophy and the theory of history, on the one hand, and some of the basic concepts of their economic theory, on the other.’\(^10\) Most important is Marx’s ‘insufficiently radical critique of the leading exponents of classical political economy, with whom he shared and from whom he derived the concepts and assumptions in question.’\(^11\)

My own argument here both accepts the fact that there is much bad blood between ecologists and Marxists, and that historical materialism has much to say about ecological problems. Indeed it has even more to say than Benton maintains. I hope to show this without committing the fallacy of wishful thinking. Whilst accepting the stated paradox, I see a different solution to it.

For the sake of conceptual clarity, I shall first give my definition of an ecological problem. I shall then relate Marx’s theory to ecological problems in a broader way than Benton does, and consider the claim that Marx held exaggerated views regarding the nature-transformative aspect of human labour. Closely related to this ‘Promethean attitude’ is the theme of the domination of nature, which I discuss in the next section. I then briefly examine two different notions of alienation.

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\(^{1}\) I wish to thank Robin Blackburn, Diane Elson, Norman Geras and Maurice Glasman for their comments and criticism.


\(^{6}\) Ibid., p. 63.

\(^{7}\) Ibid., pp. 71–73.

\(^{8}\) Ibid., p. 73.

\(^{9}\) Ibid., p. 55.

\(^{10}\) Ibid.

\(^{11}\) Ibid., my emphasis.
which seem to be helpful for the argument. Finally, I propose an alternative solution to the paradox.

**What is an Ecological Problem?**

The definition of ecological problems prefigures their solution in an important way. Similarly, the type of explanation given for them determines both their evaluation and the suggested solutions. But Benton does not offer much in the way of such an analysis; he seems simply to assume that the depletion of resources and population growth are the most pressing problems (at least for Marxist theory). However, as several studies have shown, ecological problems consist of at least the following: (1) pollution (air, water); (2) depletion of groundwater; (3) proliferation of toxic chemicals; (4) proliferation of hazardous waste; (5) erosion; (6) desertification; (7) acidification; (8) new chemicals. In an illuminating but little-discussed book, John Passmore reduces these problems to (i) pollution; (ii) depletion of natural resources; (iii) extinction of species; (iv) destruction of wilderness; (v) population growth.

Since 1, 3, 4, 7 and 8 are contained in the more general category (i), I shall take Passmore’s list as the basis for further discussion. Since (iii) and (iv) are contained in (ii), we therefore have basically pollution, depletion of (renewable and non-renewable) resources, and population growth as ecological problems. Population growth can be an ecological problem in two senses. First, it can be seen as leading to pollution or depletion of resources, because an increasing population might require more intense exploitation of raw materials, or greater technological development with pollution as a side-effect. Second, it can be seen as an ecological problem per se, that is, an increasing population in a specific place may be detrimental to human well-being. Thus, taken in the first sense, population growth is a cause of, and taken in the second sense it is an instance of, an ecological problem. Pollution itself compounds the already complex problems generated by depletion of resources and population growth. The challenge to Marxist theory is therefore even stronger than Benton’s duality suggests.

Having established what count as ecological problems, we must seek to account for their occurrence. Bringing together explanations from different disciplines such as economic and social theory, we might propose the following list: (a) unintended consequences of human action; (b) technology (with the important subclass of industrial accidents);
(c) economic growth; (d) externalities; (e) individual rationality that leads to collective irrationality. 

No one of these factors in isolation is sufficient to cause an ecological problem. Unintended consequences of human action need not lead to such a problem; neither need rational action, externalizing behaviour, economic growth, or the use of technology. They cause ecological problems only in a specific combination or in concert. However, on closer examination, it seems that technology is crucial. It is, as it were, on another logical level than the other factors: the vehicle in and through which ecologically damaging behaviour is embodied and effected. Nevertheless, it is clear that, with the exception of some high-risk technology, technology as such cannot be considered the cause of ecological problems: some technologies are neutral, some beneficial, and some are detrimental to the natural environment and to human well-being. (For the necessary qualifications, see below.) This has several implications. One is that no simple solution to the problems is available. Since a simple cause-and-effect relationship cannot be established for all ecological problems, it is nearly impossible to eliminate them at source. Another consideration confirms this. Societies have only recently become aware of the critical problem of pollution. This awareness has in some cases led to an obsession with 'cleanness', which seems to suggest that a state of affairs without pollution would be possible. Against such a myth of cleanness we should recall the shrewd comment of Mary Douglas who, albeit in another context, observed that 'uncleanliness is matter out of place'. What makes a place wrong is dependent on the cultural value system of a given society. With regard to Western societies we may say that it might be wrong aesthetically, that it is detrimental to health, or that it destroys wildlife. Ecological problems are a feature of modern societies, which they must live and cope with. In the process of coping with them it is likely that the problems will not be abolished completely but only reduced, transformed, and displaced. It may also be the case that the cultural forces shaping the perception of these problems will change. Consequently, the definition of what counts as an ecological problem will change.

17 Some fundamentalist ecologists, such as the German Carl Amery, thus demanded production to stop where possible (see Carl Amery, Natur als Politik. Die ökologische Chance des Menschen, Reinbek 1978, p. 167).


20 Commoner expressed a similar view: ‘In modern industrial societies, the most important link between society and the ecosystem on which it depends is technology. There is considerable evidence that many of the new technologies which now dominate production in an advanced country such as the United States are in conflict with the ecosystem. They therefore degrade the environment.’ (Barry Commoner, The Closing Circle, London 1971, pp. 178–9.)


23 See Passmore, pp. 45–6.

24 Note that this is possible in both directions: what we count today as an ecological problem may disappear simply because the perception of it changes, or new problems emerge which are already latent but not perceived.
Broadening Historical Materialism

If we relate Marx to these findings, it would seem that he took into account all of the possible ‘causes’. He is best known, however, for his stress on the specific capitalist mode of rational private action, which in its limitless drive for increased profit produces ‘externalities’ and unintended consequences. (This is a secondary point if the major component of ecological problems is in fact unintended or, indeed, at least in part tacitly accepted.) There is no doubt that this formed the essence of Marx’s own answer to the ecological problems he witnessed in his own time. As he put it in *Capital*:

[A]ll progress in capitalistic agriculture is a progress in the art, not only of robbing the labourer, but of robbing the soil; all progress in increasing the fertility of the soil for a given time is a progress towards ruining the lasting sources of that fertility. The more a country starts its development on the foundation of modern industry, like the United States, for example, the more rapid is the process of destruction. Capitalist production, therefore, develops technology, and the combining together of various processes into a social whole, only by sapping the original sources of all wealth—the soil and the labourer.  

But an explanation of this type is inappropriate, since socialist countries (or non-capitalist enterprises in capitalist economies) produce ecological problems too. However, I shall argue that Marx’s analysis remains profound and relevant, and still provides insight into the ecological challenge.

Contrary to Benton, I maintain that a ‘broader historical materialism’ can in fact be revealed by a conceptual reconstruction of Marx’s analysis of the labour process. According to Marx, humankind’s existential situation is characterized by the fact that it has to live simultaneously in and against nature. This is to say that people must stay in contact with nature in order to survive (food, shelter and so forth). But they also transform nature for their purposes by means of technology. This double relation has developed from simple into complex forms. In primitive societies nature was merely ‘appropriated’, that is, fruit and vegetables were gathered and animals were hunted. With the advance of technology, this appropriation of nature is no longer a direct one; it becomes mediated. The mediation takes place by means of technology. As Marx put it, ‘technology discloses man’s mode of dealing with nature.’ ‘But just as a man requires lungs to breathe with, so he requires something that is the work of man’s hand, in order to consume physical forces productively.’ Marx calls this process ‘metabolism’, or ‘interchange with nature’ (*Stoffwechsel*).

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26 Therefore I do not engage in a detailed critique of Benton’s criticisms of Marx. Instead, I give an alternative reading.
27 See *Grundrisse*, Harmondsworth 1973, p. 706, where Marx speaks of humankind’s ‘mastery over nature’ and ‘participation in nature’.
28 *Capital* Volume 1, p. 352.
29 Ibid., p. 365.
accept the historical account that technology has developed and that therefore the relationship mankind/nature has become mediated, it seems obvious that a step back to a stage of immediate appropriation of nature is not feasible. The ecological problematic thus has to be tackled on the premiss of a modern attitude towards nature. My contention is that Marx's theory offers a great deal to such an understanding.

Yet another point is at issue here. Benton says that Marx overestimates the nature-transformative capacities of the labour process. First, he argues that in ‘agricultural labour-processes, by contrast with productive, transformative ones, human labour is not deployed to bring about an intended transformation in a raw material. It is, rather, primarily deployed to sustain or regulate the environmental conditions under which seed or stock animals grow and develop. There is a transformative moment in these labour processes, but the transformations are brought about by naturally-given organic mechanisms, not by the application of human labour.’

But Marx certainly was aware of this fact (by chance, Benton quotes Adam Smith, from a citation in Capital, in support of his argument). Benton seems to overlook the fact that for Marx human interventions into these natural processes also count as transformative actions, since prepared ground is quite different from untouched nature. I therefore simply cannot see the significant difference between transformative and ‘eco-regulatory’ labour processes. Benton stresses the fact that all transformative processes have to take place in the face of natural limits and contextual conditions which are ‘relatively impervious to intentional manipulation’, in some respects even being ‘absolutely non-manipulable’. But as far as this argument is concerned, it is rather a question of empirical evidence than of an established fact. For the examples Benton gives (sun radiation, weather manipulation, bio-technology) are open to discussion and to scientific research and technological development.

How one evaluates the results of such technologies is another question, but this has nothing to do with the possibilities that exist or will exist. Benton seems to define technological possibilities too narrowly because they seem to him undesirable. This confusion apart, it is ironic that Benton stresses the rigid character of ‘contextual conditions’ and ‘natural limits’ in a world where actual industrial societies explore the possibilities of pushing these barriers further and further back—the substitution of raw materials, development of new synthetic materials, genetic engineering and information technologies being the main examples.

31 Benton, p. 67.
32 It is in this sense that he makes fun of Feuerbach, saying that ‘untouched nature’ does nowhere exist (with the possible exception of some coral islands); see Karl Marx and Friedrich Engels, The German Ideology, in MECW, vol. 5, London 1976, p. 40.
33 Marx says: ‘Mirabeau’s “Impossible! Ne me dites jamais ce bête de mot!” is particularly applicable to modern technology.’ (Capital Volume 1, p. 448.) He speaks of an ever-increasing productivity of labour together ‘with the uninterrupted advance of science and technology’. (Capital Volume 1, p. 567.) We may find these statements too optimistic and too trustful of scientific technological progress. But they do seem to conform better with the facts of present scientific and technological development.
The Domination of Nature

It is in the conceptual framework of *Stoffwechsel* that the much discussed (and, of course, often dismissed) concept of the domination of nature has to be located. Technology is the mediating instance without which human beings could not secure their interchange with nature. Marx's approach is essentially based on Hegel: 'As soon as he has to produce, man possesses the resolve to use a part of the available natural objects directly as a means of labour, and, as Hegel correctly said it, subsumes them under his activity without further process of mediation.'\(^{34}\) And: 'Nature builds no machines, no locomotives, railways, electric telegraphs, self-acting mules etc. These are products of human industry; natural material transformed into organs of the human will over nature. They are *organs of the human brain, created by the human hand*; the power of knowledge, objectified.'\(^{35}\)

Marx's concept of nature belongs to a discourse that dates back to Bacon and includes such thinkers as Hegel and Nietzsche.\(^{36}\) It is this modern view of nature that has long structured philosophical reasoning and that has recently come under attack. As we shall see, Marx did not merely follow Bacon or Hegel, but developed a quite *unique* position, however firmly the 'modern' concept of nature is at its root. Consequently, in discussing Marx's approach, this whole philosophical tradition is involved. A position such as that of fundamentalist ecology, which refutes the Marxian position, thus challenges the entire discourse. One can therefore regard Marx's position as a test case for the integrity of the modern discourse on nature. This is all the more interesting since Marx, in my view, has given the concept 'domination of nature' the most compelling formulation. Two points should be mentioned here: (1) The concept of domination makes sense for Marx only with respect to interests and needs. Recall the example of King Midas who had the power to turn everything he touched into gold. Now this is clearly a self-defeating power, which we would hardly include in a reasonable concept of domination. Likewise, a society that does not take into account the repercussions of its transformation of nature can hardly be said to dominate nature at all. In this version, the usual meaning is reversed. In the usual meaning, ecological crises are perceived to be a result of this very domination of nature. But here they are seen as its *absence*. (2) Marx links the concept of domination of nature to his communist project: for him communism is a state

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\(^{34}\) *Grundrisse*, p. 734.


\(^{36}\) From Bacon (‘nature is a storehouse of matter’), Hegel (‘nature has no immanent purpose’), and Marx (‘nature ceases to be recognized as a power for itself’), there is a direct line to Nietzsche (‘will to power’). For an exposition of this discourse, and its historical emergence, see William Leiss, *The Domination of Nature*, New York 1972. But unlike the others' shared view that man should make an impact on the world, for Marx this goal is related to the more ambitious goal of controlling all natural and social processes.
of affairs in which human beings are capable (for the first time) of full self-realization. All natural and social conditions are the products of their common conscious control. Communism, therefore, is the culmination of a process of increasing mastery over nature.

Marx time and again ridiculed all forms of nature worship and sentimentalism. This position becomes clear when we look at his appraisal of capitalism, in so far as the latter ‘creates bourgeois society and the universal appropriation of nature’. In a polemic against the ‘true socialists’ (in the German Ideology) Marx makes fun of a view which sees harmony essentially in nature:

‘Man’ enters the realm of ‘free nature’ and utters, among other things, the following tender effusions of a true socialist’s heart: . . . Gay flowers . . . tall and stately oaks [. . .] forest birds . . . [. . .] I see [. . .] that these creatures neither know nor desire any other happiness than that which lies for them in the expression and the enjoyment of their lives. 38

Marx comments: ‘“Man” could also observe a great many other things in nature, e.g. the bitterest competition among plants and animals; . . . he could further observe that there is open warfare between the “forest birds” and the “infinite multitude of tiny creatures”.’ 39 Another example of Marx’s fierce rejection of any ‘nature cult’ is in his polemic against Daumer, where he comments on the following passages from Die Religion des neuen Weltalters: ‘Nature and woman are really divine, as distinct from the human and man . . . The sacrifice of the human to the natural, of the male to the female, is the genuine, the only true meekness and self-externalization, the highest, nay, the only virtue and piety.’ 40 Daumer then cites Stolberg’s poem ‘An die Natur’: ‘Nature holy, Mother sweet,/ In Thy footsteps place my feet./ My baby hand to Thy hand clings,/ Hold me as in leading strings!’ and comments: ‘Such things have gone out of fashion, but not to the benefit of culture, progress or human felicity.’ 41 Now look at Marx’s outrage:

Herr Daumer’s cult of nature . . . is a peculiar one. He manages to be reactionary even in comparison with Christianity. He tries to restore the old pre-Christian natural religion in a modernized form . . . We see that this cult of nature is limited to the Sunday walks of an inhabitant of a small provincial town who childishly wonders at the cuckoo laying eggs in another bird’s nest . . . at tears being designed to keep the surface of the eyes moist . . . and so on . . . There is no mention, of course, of modern natural science, which, with modern industry, has revolutionized the whole of nature and put an end to man’s childish attitude towards nature as well as to other forms of childishness. But instead we get mysterious hints and astonished philistine notions about Nostradamus’ prophecies, second sight in Scotsmen and animal magnetism. For the rest, it would be desirable that Bavaria’s sluggish peasant economy, the ground on which grow priests and Daumers alike, should at last be ploughed up by modern cultivation and modern machines. 42

37 Grundrisse, p. 409.
38 MECW, vol. 5, p. 471.
39 Ibid.
40 MECW, vol. 10, p. 244.
41 Ibid.
42 MECW, vol. 10, p. 245, my emphasis.
Instead of this sentimental notion of nature, Marx praises Hobbes and Hegel for their realistic view: ‘Hobbes had much better reasons for invoking nature as a proof of his bellum omnium contra omnes, and Hegel, on whose construction our true socialist depends, for perceiving in nature this cleavage, the slovenly period of the Absolute Idea, and even calling the animal the concrete anguish of God.’ What is interesting here is that Marx attacks an argument about nature which is also present in contemporary ecological discourse. Marx’s polemic seems to have been written directly against some ecological fundamentalist: ‘The true socialist proceeds from the thought that the dichotomy of life and happiness must cease. To prove this thesis he summons the aid of nature presupposing that this dichotomy does not exist in nature and from this he deduces that since man, too, is a natural body and has the properties which bodies generally possess, this dichotomy ought not to exist for him either.’

Benton correctly summarizes and interprets a passage from Engels’s Socialism: Utopian and Scientific and comments: ‘[I]n earlier stages of history, humans have suffered a doubly conditioned lack of autonomy. In so far as their transformative powers vis-à-vis nature have been limited in their development, they have been at the mercy of, dominated by, the forces of external nature. But superimposed upon this source of domination has been another, rooted in society itself, experienced as a “second nature”. With the historical development of human social powers vis-à-vis nature there arises the possibility that the tables can be turned with respect to both sources of oppression: humans can acquire communal control over their own social life, and through that, over nature itself.’ But Benton is critical of this perspective. He continues: ‘But if the acquisition of human autonomy presupposes control over nature, this suggests an underlying antagonism between human purposes and nature: either we control nature, or it controls us! No room, apparently, for symbiosis, peaceful co-existence, mutual indifference or other imaginable metaphors for this relationship.’

As far as the use of the phrase ‘domination of nature’ is concerned, there seems to be nothing wrong with it if it denotes ‘conscious control’. In this sense we speak of ‘taming’ a river, or of taming wild animals. To take another example: imagine a musician who plays her instrument with virtuosity. We call her play ‘masterly’; in German one would say ‘sie beherrscht ihr Instrument’. It is in this sense that we have to understand the domination of nature. It does not mean that one behaves in a reckless fashion towards it, any more than we suggest that a masterly player dominates her instrument (say a violin) when she hits it with a hammer.

**Anthropocentrism versus Ecocentrism**

I take it that the anthropocentric view lends itself naturally to such a
reading. Non-anthropocentric views often (and typically) refuse all talk about ‘mastery of nature’. But such reasoning gets the matter wrong. As a defender of anthropocentrism, the American philosopher Bryan Norton correctly observed that environmentalists often fall prey to two typical confusions. The first is the belief that one must choose between attributing intrinsic or instrumental value to an object—that no object can be valued for its intrinsic value and simultaneously for its usefulness. The second is the belief that one must either attribute intrinsic value to an object, or else leave it without any protection from the vagaries of human consumptive demands. Such beliefs sometimes lead to the confusion that the protection of nature on anthropocentric grounds is a contradiction in terms.

As regards the first belief, Norton rightly contends that ‘one can assign instrumental value to an object without automatically denying that it has value beyond that usefulness... Attributing intrinsic value to an object limits the ways in which that object can be used, but need not prohibit all use of it.’

As regards the second belief, Norton shows this to be wrong as well. A simple analogy makes this clear: ‘One need not attribute intrinsic value to a neighbour’s property in order to have a good reason not to destroy it. Nor need one attribute intrinsic value to nature in order to have good reason not to use it destructively.’ Interestingly, from an instrumental view of nature thus understood, one can derive a rationale for the protection of species which is again anthropocentric. One might believe that humans who protect rather than destroy other living things are less likely to be violent in their dealings with other humans. To quote another example from Norton, one should, therefore, value wild birds, for example, ‘as providing occasions for the uplifting of human attitudes and values’.

The anthropocentric approach has the main virtue of offering a reference point from which to evaluate ecological problems. This, as we shall see, can be defined in different ways (currently living human individuals, society, mankind, future generations); but no matter how we define it, it firmly establishes a clear criterion of how to judge existing ecological phenomena. Any ‘ecocentric’ approach, on the other hand, is bound to be inconsistent, unless it adopts a mystical standpoint. It is inconsistent because it pretends to define ecological problems purely from the standpoint of nature. It starts with assumptions about nature and natural laws to which all human action should adapt. Note that the refusal of anthropocentrism is followed by a conspicuous position which anthropomorphizes nature; that is, it projects human standards and inventions into the working of nature. But why should nature work in a ‘balanced’ manner? Or why should nature always be beautiful? Is it not humankind that introduces laws of beauty into nature? Marx, in the Paris Manuscripts, put it thus: ‘Man forms objects in accordance with the laws of beauty.’

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48 Ibid.
49 Norton, p. 221.
evident, therefore, that the definition of 'nature's nature' and of ecological balance is a human (and, therefore, a social) act, a human definition which sets an ecological balance in relation to social needs, pleasures and desires. If we characterize human beings as living in, and dominating, nature, this does not produce two incompatible statements. When we term ecological a problem that arises as a consequence of society's dealings with nature, many might agree. But I think it is useful to push the point further. It does not mean that the very fact of dealing with nature (manipulation, domination, harnessing or inducing) is the crucial point, the 'cause', so to speak, of ecological problems. Ecological problems arise only from specific ways of dealing with nature. To repeat my earlier claim: both society's existence in nature and its attempt to dominate nature are compatible; human beings do indeed live in, and dominate, nature.\(^{51}\)

By their misunderstanding of this relation, both ecologists and their declared enemies maintain the mutually exclusive character of the two predicates. Consider the following argument which takes the ecocentric approach to extremes, thereby revealing its absurdity. It is difficult to know what is 'normal' for nature. Ecologists will probably argue that the 'normal' state of nature is one of balance. Since I cannot see how this definition makes sense without reference to human interests and definitions, I maintain that nature is always in 'balance with itself'. Take the example of a river in which, due to pollution (detergents), no fish can survive. But instead of fish, other animals and plants (for example, algae) are flourishing. The ecologist, confronted with such an argument, would probably say that if the river cannot return to the former ('normal') state under its own powers, its ecosystem would have to be called 'unbalanced'. But in so arguing, she would only reveal her preference for higher living organisms. Lower animals such as insects and bacteria are usually outside the concern of ecological reasoning. (Albert Schweitzer tried to be consistent and defended the right of living for the tsetse fly and the tubercle. This position, radical in ethical and religious respects, makes a consistent course of human action impossible. Consider the case of the AIDS virus!)

Let us again take the argument a step further and consider the example of a river that is drying out. In this case we once more have 'nature', in the form of sand, rocks, plants, insects, amphibians, reptiles, mammals. The ecologist would probably maintain that nature's diversity and complexity were being destroyed. And here, ironically, we have the re-emergence (if only implicit) of the anthropocentric view: namely, that it is man who has an interest in conserving natural complexity. Now an adherent to the ecocentric view could argue that

\(^{51}\) If someone were to criticize the concept of 'domination' of nature because of its odd connotations, we could reply with this reflection by Walter Benjamin: 'The mastery of nature, so the imperialists teach, is the purpose of all technology. But who would trust a cane wielder who proclaimed the mastery of children by adults to be the purpose of education? Is not education above all the indispensable ordering of the relationship between generations and therefore mastery, if we are to use this term, of that relationship and not of children? And likewise technology is not the mastery of nature but of the relation between nature and man.' (Walter Benjamin, 'One-Way Street', in *One Way Street and Other Writings*, London 1979, p. 104.)
nature ‘for itself’ should be complex. But, unless one adopts a mystical or religious standpoint, there is always a human interest behind the attitude that nature should be left out there ‘for itself’. The motives behind such a human interest are either of an aesthetic or a purely selfish character, or they spring from humanity’s general care about its environment. If we do not conceive of the ‘selfish’ motive in a narrow, economic, short-term way, then all criteria can be reduced to this category. My suspicion is that the discourse of ecology has shaped its arguments in a counter-position to economics, and also has taken over a basic flaw of that theory, namely the identification of short-term rationality (as expressed in economic behaviour) with rationality as such. As a result of this identification, it is only logical to refuse an anthropocentric approach as a guide to solving ecological problems: human beings are seen as inherently shortsighted; it follows that their needs should not count as criteria for ecological politics. Doing away with this confusion, the anthropocentric standpoint makes perfectly possible a concern about the ‘flourishing of nature’; it is by no means bound to be an accomplice to the tendencies that cause ecological problems. Yet, what is more, I maintain that this standpoint is the only one able to speak consistently in terms like ‘flourishing nature’, and the only one which lays its mode of critique open, thus facilitating analyses and solutions for these problems.

**Versions of Nature**

In a recent study of contemporary ecological thought, Mechthild Oechsle found naturalism to be the prevalent viewpoint. Naturalism, according to her, proceeds in the following way. It first juxtaposes nature and society; they are seen as standing in contradiction to each other. It then tries to solve this contradiction in such a way that society adapts its laws to those of nature. ‘Naturalism means to attempt to explain society from the viewpoint of the laws of nature, to derive organizing principles of society and norms of social life from ecological principles.’

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52 Mechthild Oechsle, *Der ökologische Naturalismus*, Frankfurt 1988; p. 9, my translation.


from this they derive similar tough political measures. Bookchin argues that spontaneity in life converges with spontaneity in nature, and Lalonde stresses the fact that nature is, and society should be, self-organizing. ‘Nature’, then, seems to be an uncontested authority. However, closer analysis shows each version of nature to be a construction of its author. Consequently, the ‘nature of nature’ is a matter rather of debate than certainty.

It is thus clear that any discourse on nature and ecological problems is not without presuppositions; and these presuppositions lie within the cultural background of the participants of the discourse—they are a product of history. A definition of ‘nature’ or of ecological problems, therefore, always relates to an anthropocentric element. Oechsle, for example, rightly defends humanity’s special position within nature; and she rightly refuses to accept ecological naturalism. However, her ambivalence towards anthropocentrism leads to an ambiguous defence of it. To repeat: in my view, humanity’s special position within nature is characterized by its domination of nature. In order to separate the question of whether humanity has a special status within nature from the question of whether it should dominate nature, Oechsle (approvingly) cites Mumford, who claimed that within occidental civilization there have been examples of a ‘democratic’ technology. This argument allows her to defend a sort of anthropocentrism without having to embrace the notion of domination of nature. However, a distinction between a democratic and an authoritarian technology makes sense only with respect to humanity, not with respect to nature. Every technology, even the softest, forms a part of humanity’s domination of nature. Oechsle agrees with authors like Amery, Bahro and Meyer-Abich that we have to research the origins of the destruction of nature. These are seen in the specific occidental human self-understanding and worldview. As Amery puts it: ‘We have to lay bare the roots of these historical and ideal attitudes in order to initiate the painful process of a planetary revolution . . . If one forgets these roots, all necessary proposals will meet political and social resistance; and only if we become aware how deep these roots reach into our collective unconscious, will the attempt succeed.’

But this ‘planetary revolution’ seems to be something of a utopian project; some might consider it even quite dangerous. Therefore, I think it is worthwhile to investigate the possibilities that a modern approach to the problematic offers us.

Human beings have no fixed place where they must live; virtually every place on this planet can be inhabited by them. By this they distinguish themselves from most other animals (and, of course, plants) which survive only within a limited geographical, biological, climatic zone. How are human beings able to survive in an ‘insecure

57 Bookchin, p. 10.
58 Oechsle comes close to acknowledging this when she writes that even the most ‘dialogical’ approaches towards nature (as, for example, proposed by Prigogine) cannot but lead to a more perfect domination of nature. In Trepl’s words, ‘Ecological technology is total control. For this reason ecology is not outside the logic of progress, but progress culminates in it.’ (Ludwig Trepl, ‘Ökologie eine grüne Leitwissenschaft? Über Grenzen und Perspektiven einer modernen Disziplin’, Kurzbiuch 74, 1983.)
environment? The answer is: by constructing a second 'nature' around themselves.\textsuperscript{60} This artificial, human-made nature is the embodiment of their necessity to fight against nature; it is the solution of the apparent contradiction that they are in and against nature. But something further follows from this. Because human beings organize their lives in the described way, they have no 'natural enemies', in contradistinction to all other species. However, there are times when they are opposed by specific elements of nature; nature exerts its resistance upon them. As John Stuart Mill observed, the powers of nature 'are often towards man in the position of enemies, from which he must wrest, by force and ingenuity, what little he can for his own use.'\textsuperscript{61}

Nature, as such, is not always beneficial to human beings. It is completely mistaken to identify nature with 'good', and technology or human culture with 'bad'.\textsuperscript{62} Moralizing rarely helps. As Passmore has rightly observed, 'these natural processes may in fact be quite harmful; so that, let us say, oysters from granite regions ought to be condemned for human consumption. The "natural" is not necessarily harmless, let alone beneficial to man.'\textsuperscript{63} In exactly the same vein, Adorno, reflecting on the landscape of the Swiss Alps, remarked: 'Both the scars of civilization and the untouched zone beyond the timber line are contrary to the idea that nature is cheering and warming, dedicated only to man; they reveal what the cosmos looks like. The usual image of nature is limited, narrowly bourgeois, sensitive only to the tiny space in which historically familiar life flourishes; the bridle path is philosophy of culture.'\textsuperscript{64} And again Passmore, in reply to Barry Commoner's 'Third law of ecology—nature knows best', pointed out:

It is true enough... that every human intervention in an ecosystem is likely to disturb the workings of that system in a way that is detrimental to some member of it. So much is true of every change, man-induced or nature-induced. But it by no means follows, as his 'law' might seem to suggest, that every such change, or even most of such changes, will be detrimental to human beings. Unlike the watches to which he compares them, ecological systems were not designed for man's use. When men picked seeds off plants and sowed them on cleared ground they acted in a way that was detrimental to the organic life which was accustomed to feed on the fallen seeds. But only the most unreconstructed primitivist would suggest that the actions of our agricultural forefathers were destructive of human interests. A nature left entirely alone as 'knowing best' would support only the dreariest and most monotonous of lives.\textsuperscript{65}

The specific twist that Marx adds to the topic is, however, open to

\textsuperscript{60} In comparison, an animal species in an unfavourable environment will undergo an evolutionary process in order to survive.


\textsuperscript{62} As Kluge has shown in a detailed study, much of the ecological rhetoric consists of the juxtaposition of \textit{life} and \textit{death}—where nature stands for the former, industrialism for the latter. (See Thomas Kluge \textit{Gesellschaft, Natur, Technik}, Opladen 1985.)

\textsuperscript{63} Passmore, p. 47.

\textsuperscript{64} Theodor W. Adorno, ' Aus Sils Maria', in \textit{Gesammelte Schriften}, Bd. 10.1, Frankfurt am Main, 1968, p. 327, my translation.

\textsuperscript{65} Passmore, p. 185.
criticism, albeit not to a criticism endorsed by Benton. The reason why Marx's outline is problematic lies in the epistemological position that humans could understand the world they created much better than the world that is naturally given. This *verum idem factum* principle was inherited by Marx from Vico.66 According to Vico, nature is a product of God and thus only intelligible to him; culture, on the other hand, is a product of man and thus intelligible to him. However, this thought poses serious theoretical problems for Marx. One of them is that he does not reckon with the possibility that human objectifications, such as modern social relations, may become so complex that they are no longer susceptible to everyone's understanding. Marx thought—along the lines of paragraph 4 of Hegel's *Philosophy of Right*—that the more people transform first nature into second nature, the more they would become masters of their fate. And this is the real core and the ultimate source of motivation for Marx's critique. It is the *humanist* conviction that everything that impinges upon human dignity must be submitted to theoretical criticism and practical obviation. The theme of conscious control over human affairs is thus the Archimedean point from which Marx levels his critique of capitalism (but, also, of earlier modes of production). It is from this point that he derives his *normative* perspective of what a communist society should look like. In the first place it should be a society that institutionalizes conscious human control over its fate. And it is this that informs his evaluation of former and existing modes of production. Most instructive in this respect is the opening chapter of *Capital* Volume 1, section 4, where Marx discusses the 'Fetish Character of Commodities and Its Secret'. Marx says that people in the ancient world were governed by the product of their brains (that is, religion), whereas in the modern world they are governed by the products of their hands. Both states of affairs are unworthy of human dignity. This is the reason why Marx, throughout his work, put so much stress on the topic of alienation, reification and fetishism. Capitalism was not only criticized for its poor economic performance, which shows up in economic crises; it was not only criticized because it exploited the workers,67 but also because it reduced the workers to *slaves*, making them dependent on a system of wage-slavery,68 and prevented them achieving self-realization.69 But, likewise, capitalists are also caught in a situation unworthy of their human nature: even if they are better off than the workers, they cannot control the aggregate outcome of their actions on the world market. Thus they fear the repercussions of their own behaviour, in much the same way that the primitive feared nature.70

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69 For this 'expressive' notion of labour in Marx, see Charles Taylor, *Hegel*, Cambridge 1975.
70 It would be interesting to ask whether the topic of alienation only makes sense on the basis of methodological individualism (See Jon Elster, *Making Sense of Marx*, Cambridge 1985) or if it rather points to structural or systemic features.
Alienation in Marx

I believe that this humanist model still has an important place in any critical project of social, political and philosophical theory. And, significantly for the present argument, it also has a direct bearing on the ecological problematic. For if modern societies are threatened by their own transformation of nature, the above analysis by Marx is applicable. If we take it as given that technology stands at the heart of the matter, we gain an even greater understanding of it on the basis of Marx’s own thought; the reason being that Marx, in the Grundrisse and the Manuskripte of 1861–63, employs a double notion of alienation.

The first conception of alienation is well known and needs no elaboration here. It is that alienation in capitalism is a social phenomenon that arises on the basis of commodity production (which is, above all, value production), under the conditions of private production and markets. With the abolition of capitalism, so the argument goes, alienation will also vanish.

But there is a second conception implicit in the notion of alienation. Marx also employs the concept in the analysis of technology; that is, at the level of the labour process, not only at the level of the process of valorization. Since his main concepts in the theoretical framework of the Critique of Political Economy have a dual character—commodity as the unity of use-value/exchange-value; labour as the unity of concrete and abstract labour; mode of production as the unity of productive forces and relations of production—it could be the case that symptoms of alienation can be detected at the level of use-value. Marx develops this thought with respect to capitalist machinery. In the ten years preceding the publication of Capital, Marx struggled with the problem of how to evaluate capitalist machine technology. On the one hand, he was convinced that the development of the productive forces was an objective, unfolding process that would lead to the advent of communist society. On the other hand, he saw the reality of the capitalist labour process, which—to a large degree—was determined by the use of machinery that degraded, crippled and deprived the workers. This latter observation ran counter to Marx’s conception of the good life, to his conviction that human beings are creative and should expand their self-realizing capacities.

Past labour confronts the worker in the form of an automaton moving a

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71 I cannot develop here the limits of this model, which have to be seen in its close affiliation with the theory of the subject, with Marx’s (and Hegel’s) hope to bring about a final reconciliation in history. For a critique, see Seyla Benhabib, Critique, Norm, and Utopia. A Study in the Foundations of Critical Theory, New York 1986; also Jürgen Habermas, The Philosophical Discourse of Modernity, Cambridge 1988. But in a weak sense we nonetheless can use the model as a regulative idea, that is, to reduce all obstacles to human self-realization. See also Iring Fetscher, ‘Aufklärung über Aufklärung’, in A. Honneth, T. McCarthy, C. Offe and A. Wellmer, eds., Zwischenbetrachtungen im Prozeß der Aufklärung. Jürgen Habermas zum 60. Geburtstag, Frankfurt am Main 1989, pp. 657–89.

machine, apparently autonomous from labour, self-acting. Instead of being subordinated to labour, it subordinates labour, the iron man against the man of flesh and blood. The subordination of his work under capital... which is already given with the concept of capitalist production, appears here as a technological fact. The keystone is ready. Dead labour endowed with movement, and living labour only existing as one of its conscious organs.73

Marx conceived of the development of technologies and social relations within an evolutionary perspective:74 a new social formation or a new productive force emerges out of a prior formation.75 The old is pregnant with the new, to paraphrase a metaphor Marx was fond of. But this model poses a dilemma in the case of technology (and, of course, the labour process): either the liberating form of technology is already present under capitalism, in which case the evolutionary scheme coincides with the normative orientation; or it has not yet developed and can thus be nothing but a desideratum for communist society.76 The latter position was an impossible one for Marx to take, since this would amount to an idealistic hope for a better future. His solution to the dilemma is, therefore, to attribute all negative aspects of machine technology to its capitalist use, and to attribute all positive aspects to machine technology as such.

No matter how we view this theoretical trick, it enables us to solve the dilemma in a satisfactory way. That is to say that technology, in so far as it has a detrimental impact on the natural environment (and also on human beings), has to be changed and replaced by a technology that meets the criteria that it be consciously controlled and worthy of human nature. At the same time, as I indicated above, the view that capitalism is the main cause of ecological problems must be abandoned. Communism, understood in the sense of a rational society that allows for human self-realization, and exercises conscious control over its fate, would thus not in the first place require the abolition of private property and the installation of a centrally planned economy, as orthodox Marxism maintained. It would direct its attention to a wider range of phenomena than those Marx was explicitly dealing with in Capital (that is, value theory, crisis theory, class theory, theory of revolution). Nevertheless, the method and criteria of this critique are

73 Zur Kritik der Politischen Ökonomie. Manuskript 1861–63, in MEGA, 11.3.6, Berlin 1982, pp. 2057–8, my translation. Marx’s formulation in the Grundrisse is similar: ‘[I]t is the machinery which possesses skill and strength, is itself the virtuoso, with a soul of its own... The workers’ activity, reduced to a mere abstraction of activity, is determined and regulated on all sides by the movement of machinery and not the opposite.’ (Grundrisse, p. 693; see also p. 529 n., 585, 704.)
75 See Karl Marx, Preface to the Critique of Political Economy.
76 Moore argues convincingly that in Marx there is a cleavage between his historical materialism and his philosophical humanism. Thus, whereas Benton perceives the tension to be between Marx’s historical materialism and his economic theory, Moore argues that Marx is unable to derive the principles of ‘humanist communism’ from the basis of his ‘scientific’ historical materialism alone. (Stanley Moore, Marx on the Choice between Socialism and Communism, Cambridge, Mass. 1980.) See also G.A. Cohen, ‘Reconsidering Historical Materialism’, in J. Pennock and J.W. Chapman, eds., Marxism: Nomos XXVI, New York 1983, p. 227.
still present in such an approach. Marx’s own interest in the history of technology should stimulate similar research by contemporary Marxists and critical social scientists.\(^{77}\)

To return to the original paradox: why, given the apparent congruence of the basic ideas of historical materialism with the ecological approach, is there so much bad blood between Marxists and Greens? In my view the answer has to be sought in the theme of the domination of nature. Greens dismiss the Promethean attitude towards nature as the cause of all evil, and plead for a new, harmonious relationship with nature. They favour a re-enchantment of the world\(^ {78}\) and the development of an ecological ethics.\(^ {79}\) Some extreme ecological fundamentalists even argue for a radical break with the modern approach towards nature, a return to modes of a ‘simpler life’. Even granted that such a jump backwards might be possible (which I deny) or desirable (which I leave open), it would cause considerable social tensions that might outweigh by far the hypothetical ‘gains’ of an ecologically ‘embedded’ life.

As far as such approaches are concerned, I simply affirm that Marx’s formulation of the modern relationship to nature is, with some qualifications, still superior to romantic dreams about a completely new relationship. Between nature and humankind there can be no harmony; the appropriate forms of transforming nature must be set and defined by historically existing human cultures.\(^ {80}\) I therefore do not believe that the paradox should be explained away by an insufficient recognition of natural limits on Marx’s side. The conflict is deeper than this. Benton’s solution of the paradox is thus found wanting on three counts. First, he generally reduces ecological problems to problems of natural limits, which blinds him to the greater variety of ecological problems —namely, pollution and its manifold causes. Second, in thus reducing the problem, he understates the real issues at stake between Marxists and environmentalists. But third, and most worrying, Benton himself seems to fall prey to a form of ecological reasoning in which he criticizes Marxism for adopting a Promethean attitude towards nature. It is ironic that Benton claims that Marx has become a victim of a spontaneous ideology of the nineteenth century, namely, industrialism and progress,\(^ {81}\) for he himself seems to be the victim of a spontaneous ideology of the late twentieth century—ecological romanticism.


\(^{81}\) Benton, p. 76.
When the ecological movement emerged in the 1960s, it warned that continued consumerism and growth would lead to ecological catastrophe. This "green" philosophy represented a challenge to the basic tenets of Marxism, which traditionally ignored issues of ecological sustainability. Tracing the history of the integration of ecological understanding with Marxist philosophy, The Greening of Marxism explores the influence of green politics on Marxism, examines the new politics emerging from these movements, and shows how red-green alliances can transform the political landscape. Excerpt.