
This article highlights valorization through commodification as a process specific to and defining of the capitalist mode of production as the key dynamic to ecological crisis. It goes on to review recent Marxist scholarship on the political economy of ecological crisis and provides a critical assessment of the work of James O'Connor that draws on the work of Andre Gorz.

Capitalism, Valorization and the Political Economy of Ecological Crisis

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THE LAST DECADE OR SO has witnessed considerable intellectual efforts within Marxism to develop coherent analyses of Marxism's relationship to environmentalism and political ecology. Some, like Ted Benton, have sought to focus scholarly attention on the relationship between Marxism and ecology particularly by critically examining the question of so-called 'natural limits' in Marx and through such a consideration to evaluate the extent to which Marx can be read as a thinker sympathetic to green themes, values and objectives (Benton, 1989: 51-86). Others, such as Reiner Grundmann, have sought to defend Marxism against green claims that Marxism's anthropocentrism renders it fundamentally anti green (Grundmann, 1991: 103-120). Still others, notably James O'Connor, have looked to Marxism's development of the theoretical corpus of political economy and have sought to examine the extent to which Marxist political economy can be extended and developed in ways that can take account of ecological crisis and the concerns of the green movement.

Such intellectual scrutiny of the theoretical legacy of Marxism has been important not least because the green movement, taken as a whole, has tended to be critical and dismissive of the socialist movement and what, in particular, it has taken to be its Promethean account of the relationship between human culture and 'nature', an account which is said to make Marxism irreconcilable with the green movement. An

unwillingness to engage more thoroughly with Marxism is also evident in the common tendency among greens to locate the site of the environmental problematic at the abstract level of modernity and the industrial mode of production, thus implicating socialism at least as much as capitalism in the crisis of the environment.

The current wave of Marxist scholarship on the environment, dating from the late 1980s, can thus be read, in part, as an attempt to tackle these criticisms and to provide a clear theoretical foundation for the elaboration of an ecological Marxism and a coherent Red-Green politics. On the other hand it is important to note that ecological Marxism, despite the claims of some of its more recent exponents, is not altogether new. Indeed, sophisticated applications of Marxist political economy to the question of ecological crisis have been available since the early 1970s if not before, notably in the work of the French social theorist André Gorz.

This article provides a review and assessment of the contribution of neo-Marxism to the development of the political economy of ecological crisis and its potential resolution. Section I provides a brief critique of green approaches to the industrialisation/environment contradiction. It insists, contrary to green approaches, that a proper understanding of the dynamics of the environmental crisis must identify its roots in specifically capitalist production. Sections II and III seek to specify the Marxist political economy approach to understanding the environmental crisis: Section II focuses, first, on the ecological problematic of commodity production as necessarily boundless production. It goes on, second, to consider how accumulation crises have impacted on the environment, culminating in cost and reproduction crises. This section focuses primarily on the work of Gorz while also taking into account the recent contribution of Immanuel Wallerstein to the theorisation of ecological crisis. Section III outlines O'Connor's remodelling of the classical Marxist theory of crisis in terms of the so-called 'second contradiction of capitalism'. Section IV subjects O'Connor's contribution to a critical scrutiny and analysis that draws on and seeks to highlight the original contribution of Gorz to the development of ecological Marxism, a contribution which O'Connor has failed to acknowledge. Section V concludes the article by examining the institutional and cultural pre-conditions for bounding production and consumption and developing a

socialist political ecology based around the principle of democratic self-limitation.

I. The Green Critique of Modernity: a Critique

It is commonly asserted by greens that the Marxist tradition, because it operates with a Promethean view of the relationship between humanity and nature, a view which asserts that the historical trajectory of human development is towards the domination and mastery of external nature, its humanisation, cannot be reconciled with green philosophy. Marxism, in this view, takes the environment as an object to be subordinated to human reason and purposes, there to be conquered and overcome rather than sympathetically contemplated and considered. Marxist anti-ecology, according to this view, is particularly evident in the Marxist vision of communist society based on absolute material abundance and the abolition of necessity through machine-based production.

While these criticism of Marxism are not without some merit, it is equally important to note that, in any case, those Marxist scholars who are sympathetic to the aims of the green movement have generally speaking distanced themselves from such accounts of 'the Marxist tradition'. The green version of the Promethean thesis has been strongly criticised by eco-Marxists, notably Grundmann (1991) and David Harvey (1996). Grundmann argues that greens have misrepresented the 'domination of nature' thesis in their criticism of Marxism by falsely associating domination with destruction or recklessness (Grundmann, 1991: 111). But as Grundmann points out:

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. (Grundmann, 1991: 109)

Harvey (1996) has pointed out that Marxism, properly understood, has incorporated a dialectical understanding of the relationship between human beings and the environment, one which recognises the limits as much as the achievements of human understanding and knowledge. Human beings may seek to master nature, but in so doing they are constantly forced, by virtue of enlightened reason, to come to terms with the unintended environmental consequences of their actions, or what Engels referred to as the revenge of nature.

Moreover, in line with these more reflexive accounts of the 'mastery' thesis, Gorz, among others, has pointed out that ecological Marxism, based to an important degree on the humanist writings of the early Marx, must explicitly reject the absolute abundance thesis in favour of sufficiency and self limitation (Gorz, 1993; 1994: 1-14). To a significant extent, therefore, Marxists have been able to counter the criticisms of greens by demonstrating that greens have misrepresented the Marxist tradition in ways which ignore green or greenable themes within Marxism or which deliberately seek to make Marxism anti-ecology.

However, Marxists clearly do take issue with those fundamentalist greens who insist that taking ecology seriously requires the whole-sale over-turning of modernity and the industrial mode of production. At a basic level a Red-Green approach to the analysis of the environment distinguishes itself from a green approach by insisting that the environmental crisis is fundamentally a crisis created by specifically capitalist production. A major problem in green analysis, according to socialists, is that environmental degradation is conceptualised as a problem rooted in what are, in fact, historically ambiguous processes and developments, notably, industrialisation, rationality and modernity. Environmental degradation is understood, from this point of view, in essentialist terms, as primarily a physical relationship between humanity and nature. Greens, socialists maintain, have a tendency to abstract from the social relations that provide the historical context of what Marx called the human 'metabolism' with nature (see, for example, Marx, 1976: 283). As John Barry (1999: 272) has correctly argued, this leads to a 'shallow and mistaken analysis' which wrongly conceptualises industry, science and technology in ways which assume and/or imply that 'there is some inherent anti-ecological dynamic within them, so that irrespective of prevailing social

relations industrial productive forces are by their very nature (independent of productive relations) ecologically damaging’.

One consequence of this type of a-historical reasoning is that greens often appear to reify pre-modern social formations, a general point of criticism noted by Grundmann (1991: 109-117). In relation to international political economy, Eric Helleiner (1996: 60-7) has argued that the normative project of the greens is to build a neo-mediaeval world political-economic order. Other greens have seen in the pre-modern an exit route from global environmental catastrophe. As Paterson (1999: 133-4) has pointed out, this seems to be the implication of Martin Albrow’s contention that, given what he takes to be the expansionist logic of modernity in general and consequently the global nature of the contemporary environmental crisis, a rupture with modernity may now be necessary in order to force human beings to ‘resume’ a more benign relationship with nature from an earlier, pre-modern, period. An anti-modernist viewpoint is also evident in green critiques of socialist ecology. For example, Andrew Dobson, one of the leading green political theorists in Britain, has dismissed Gorz’s green credentials on the grounds that his vision of a sustainable socialist society remains ‘technology’ dependent (Dobson, 1990: 98).

In more sophisticated analyses, the relationship between technology, modernity and the environment are seen as complex and undetermined. For example, Anthony Giddens’ relatively recent engagement with the environmental problematic has been informed by the concept of reflexive modernity, a concept also developed in this context by Ulrich Beck. The problem with green analysis is that it is not sufficiently reflexive in its critique of industrialisation which thus tends to be mechanistic or dogmatic. As Gorz (1994: 8-12) has recognised, the idea of reflexive modernity represents an important intervention into ecology debates because it provides a basis for constructive critical engagement with the achievements of the Enlightenment that allows for a rejection of variously distorted modernisms (capitalism and Soviet socialism, for example) yet which does not require the indiscriminate abandonment of the modernist project, *per se*, or a romanticist advocacy of a ‘return’ to a pre-modern world.

Of course, reflexive modernity does not overcome the principal problem of green thought from a socialist viewpoint, namely, its failure to identify environmental crisis with

specifically capitalist industrialisation. This is a failing Giddens and Beck share with the greens and is the key flaw, as Goldblatt (1997) has shown, in their attempts to understand the processes underlying the acceleration of environmental degradation in the late, post-Soviet, 20th Century.

II. Valorization, Commodity Production and Environmental Degradation

There are two fundamental reasons why socialist ecology has identified the crisis of the environment specifically with capitalist production. The first is associated with the process of commodification, that is, the specific historical form taken by capitalist production as production for exchange and valorization. As Wallerstein (1997) has noted, the logic of valorization sets historical capitalism on the path towards 'the commodification of everything'. The second is associated with capitalism's own crisis tendencies which forces capital—again, because of the inescapable logic of valorization—to intensify and extend the despoilation and exploitation of nature. These two processes, commodification/valorization and crisis tendencies inherent in capitalism, have been emphasised in work on political ecology undertaken independently by Wallerstein and Gorz. In a distinct, but increasingly influential contribution, the American socialist economist James O'Connor, whose work was briefly referred to earlier and who is best known for his seminal work *The Fiscal Crisis of the State* (1973), has identified a third reason for associating capitalism with environmental degradation, namely, capital's inability to control the conditions of production. For O'Connor, this is the key to capitalism's relationship to the environmental problematic. He argues that its significance is such as to warrant a fundamental revision of Marxist political economy, one which can take account of capitalism's inability to reproduce the conditions for its own existence. O'Connor has articulated this ecological revision of Marxian political economy around the notion of the 'second contradiction of capitalism'.

a. The Commodification of Everything

Wallerstein has identified two key processes implicating specifically capitalist production in ecological crisis. The first

process is capitalism's 'imperative need to expand in terms of total production, expand geographically' (Wallerstein, 1997: 2). In this respect the ecological crisis can be understood in terms of the contradiction between the boundlessness of accumulation and commodity production and the finite nature of physical resources. Ecological crisis is the result of capitalism coming up against spatial and geo-physical limits. What distinguishes 'historical capitalism' from past, bounded, modes of production, is the 'existential priority' it gives to the limitless expansion of production and the 'conquest of nature'. Wallerstein argues that while all past modes of production or 'historical systems' transformed the ecology and even 'destroyed the possibility of maintaining balance in given areas', it is only with historical capitalism that boundlessness has become the *dominant* value system, reflecting the structural imperatives of valorization. Environmental degradation is thus essentially linked to capitalism's necessary historical rupture with bounded production or what Gorz (1993) refers to as historical systems of self-limitation. Under self-limitation the dominant social norms are those of sufficiency. The shift to boundlessness is thus necessarily marked by the social reorganisation of production and consumption in order that they can be controlled by capital in a way that ensures efficient valorization.

The second process highlighted by Wallerstein is the unwillingness of capitalists to 'pay their bills' (Wallerstein, 1997: 2). This is associated with the accumulation imperative of lower production costs and more specifically with the 'current systemic crisis of world capitalism'. This, Wallerstein maintains, has been marked particularly by a rise in global labour costs as more and more workers throughout the world have become fully integrated into capitalist relations of production. Rising labour costs has 'narrowed in various ways the possibilities of capital accumulation, leaving as the one major crutch readily available the externalisation of costs' (Wallerstein, 1997: 9).

b. From a Crisis of Over-Accumulation to a Crisis of Reproduction

Within the general context of boundless production the ecologically destructive impact of accumulation is heightened by crises. The responses of capital to these crises deepens the environmentally destructive impact of valorization *per se* to the degree that according to Wallerstein (1999: 1-11) there can be

‘no exit’ for historical capitalism from global environmental catastrophe. In separate but complementary contributions, Gorz and Wallerstein have specified the ‘moments’ of crisis which have led to the current impasse for the environment.

For Gorz, the historical trend towards unsustainable development under commodity production and competitive valorization can best be understood, concretely, in terms of capital’s various responses to what he refers to as ‘over accumulation crises’ (see, specifically, Gorz, 1980: 21-7).

In general terms, Gorz argues, capitalists respond to the falling profits which result from over-accumulation in the only ‘positive’ way they know how, namely, by seeking to sell more commodities at (where possible) higher prices. This is an attempt by capital to increase the efficiency of valorization (see Gorz, 1980: 21-7). The Fordist/Keynesian period of mass consumerism, driven by the crude valorization strategies of massive multinational corporations, can be understood in this manner. As Gorz and others, notably Marcuse (1964) and Galbraith (1958) have shown, the drive to greater efficiency in valorization was based, during this period, upon the systematic generation of false consumer needs through mass marketing and advertising strategies, product over-design and symbolic differentiation (hence the fetishism attaching to designer labels), and by the conscious development and marketing of bad (i.e. poor quality) products deliberately designed with unnecessarily limited life-cycles (built-in physical and/or social obsolescence). (These issues are discussed in more detail in Neil Maycroft’s article on page 135). Such Fordist strategies (which, of course, are still deployed) generally aimed to expand exchange value without augmenting use-value or genuinely increasing consumer welfare (Gorz, 1980: 23). In this way, the somersault logic of valorization destroyed scarce material resources in a wholly one-sided manner that failed to provide even compensating benefits for consumers in terms of more, or higher quality, material welfare.

As Gorz goes on to argue, such destructive consumption comes up against physical limits as resources extracted from the environment reach the frontiers of absolute scarcity. This new phase in the environmental crisis was signalled, in part, by the growing awareness among elites in the 1970s of what was conceptualised as impending ecological catastrophe on a global scale (see Meadows, 1972). The ecological crisis also signalled

the beginning of the crisis of Fordist accumulation. Gorz (1980: 24) has labelled this phase of the crisis a 'crisis of reproduction'. Profitability declined because of the need among capitalist firms to invest additional capital in the mere recycling of polluted resources that could only subsequently be used for commodity production and valorization. The need to recycle resources in view of scarcity and pollution thus led to a rise in the organic composition of capital for a given level or volume of use-value production. Hence capital's 'resolution' of the immediate accumulation and ecological crises of the Fordist era presupposed a deepening of the general ecological contradiction of capitalist production. It required a further expansion of commodity/exchange value production to offset the fall in profit caused by an increased organic composition of capital.

c. Ecological Crisis and the Global Rise in Labour Costs

Whereas Gorz has understood the historical dynamics of ecological crisis in terms of the rising organic composition of capital, Wallerstein has sought to understand ecological crisis in terms of rising labour costs. According to Wallerstein valorization imposes on capital an imperative need to keep costs down. An important way in which capital has always secured this objective is through the externalisation of costs where ever possible, a process which has resulted in the pollution of the environment or the degradation of the 'commons'.

Starting from this overarching assumption, Wallerstein traces the beginning of the current ecological crisis to what is identified as a significant increase in the bargaining power of labour at the global level. This has resulted from capitalism having come up against new geographical/social boundaries as a result of the extension of the global core-periphery hierarchy, and an associated break-down of the distinctions between the rural/urban semi-proletarianised and urban, fully proletarianised, global workforces. According to Wallerstein the collapse of these global workforce distinctions has meant that full-proletarian bargaining power in the urban environment can no longer be undermined by the semi-proletarian workforces generally tied to the rural environment but used as a reserve army to keep wages down in the urban sector. The bargaining strength of global labour, Wallerstein claims, 'is at the verge of a singular ratchet upwards as we move into the 21st century' (Wallerstein, 1997: 4).

This has led to the heightening of the ecological crisis because the profit squeeze coming from labour ‘makes all the more important the reduction of costs other than labour costs’.¹ Wallerstein thus concludes that the systemic constraint of higher global wage rates means that the general accumulation imperative of lower production costs in general comes increasingly to rely on the continuing ability of firms to externalise costs through environmental degradation, that is, by government or ‘society’ ‘not insisting that a production operation include the cost of restoring the environment in such a way that it is preserved’ (Wallerstein, 1997: 5). The current crisis is thus marked by a tendency for capital to become increasingly dependent on its ancient privilege of despoiling the environment with impunity—historical capitalism’s ‘dirty secret’.

To summarise, socialist political ecology has developed the classical Marxist theory of contradiction and crisis in a number of different ways in order to provide expositions of the linkages between the processes of capital accumulation and the contemporary crisis of the environment. In the work of Gorz, environmental degradation is theorised in terms of the historical/dialectical movement from a classic Marxian *economic* crisis of over-production/over-accumulation, based on a rising organic composition of capital, to an *ecological* crisis of reproduction, based on rising costs in means of production. For Gorz, such rising costs are a consequence of accumulation-induced despoilation of the environment and scarcities in the physical resource component of the conditions of production. Gorz’s focus on the rising organic composition of capital as the primary cause of crisis imparts a structuralist focus to his exposition. In Wallerstein’s view the initial crisis from which environmental degradation proceeds is a ‘crisis’ of intractably rising labour costs. In focusing on labour, Wallerstein is basing his exposition of environmental degradation under capitalism on a voluntarist or class struggle theory of economic crisis. It is the impasse of rising labour costs which forces capital to cut other costs through environmental despoilation. This, in turn, potentially heightens the class struggle at the level of eco-consciousness in so far as the latter is anti-valorization.

III. Ecological Crisis and the Second Contradiction of Capitalism

In the late, 1980s an important attempt to develop an explicitly ecological Marxism was made by O'Connor. O'Connor's analysis has been based on a revised reading of Marx the (now well known) central assertion of which is that a fundamental distinction can and *should* be drawn between what he refers to as the 'first contradiction' of capitalism, with its attendant *economically* based crisis of *over*-production, and the 'second' contradiction of capitalism with its attendant *ecologically* based crisis of rising costs or capital '*under*-production'.

O'Connor maintains that the 'first' contradiction of capitalism provides the central point of focus for traditional Marxist analysis. It is fundamentally about a contradiction between the forces and relations of production, where the latter are seen as a fetter on the development of the former. As Barry (1999: 263) has summarised, the 'first' contradiction is concerned with the 'inability of capitalism to sustain itself *internally*' (emphasis added). By contrast, the 'second' contradiction forms the starting point and central premise of *ecological* Marxism. This contradiction is fundamentally about the unsustainable relationship between accumulation and the *conditions* of production.

Crisis arises because of the failure of capital as a whole to control the 'external' conditions of production. Costs rise, first, because the conditions of production suffer degradation as individual competitive capitals seek to displace production costs onto the environment, thereby generating what orthodox economics refers to as negative 'externalities' (see Pigou, 1932). This leads, second, to a further round of rising costs as various agencies organised around the defence of the conditions of production respond politically to environmental degradation by demanding greater regulation. The second contradiction of capitalism is thus primarily concerned with the process whereby ecological degradation, caused by the negative externalities generated by competitive valorization, feeds back into a crisis of rising costs for capital in general. It is thus fundamentally about the inability of capitalism to sustain itself *externally* or to effectively reproduce the external conditions for its own existence.

The assertion that capital lacks control of the conditions of production is the source of an important political twist to

O'Connor's analysis of the second contradiction. Because capital does not own the conditions of production (whereas it does own the forces of production) its interaction with these conditions becomes immediately a matter of public policy and state regulation. According to O'Connor, this gives the second contradiction of capitalism, in contrast to the first, a directly political character. To the extent that capitalism is nevertheless compelled to despoil the conditions of production, it therefore necessarily comes up against political limitations.

It should be clear by now that O'Connor's work represents a considerable challenge to and revision of the legacy of traditional Marxism as, indeed, it was always intended to be. According to O'Connor's thesis, 'Marx was only half right'. Traditional Marxism has been fundamentally distorted by an unwarranted theoretical bias towards production and production relations to the exclusion of production conditions or the conditions of reproduction and, of course, to the exclusion, also, of the political forces that have organised around the conditions of reproduction. As Barry (1999) has noted, O'Connor's focus on questions of the reproduction of 'conditions' draws inspiration from feminist thought and, indeed, O'Connor's ecological revision of classical Marxism is, at times, strikingly reminiscent of the radical feminist critiques and revisions of Marxism developed in the 1960s and 70s.

IV. Critique of O'Connor

This brief summary of O'Connor's attempt to provide a theoretical basis for an ecological Marxism gives rise to three basic questions which are addressed below: first, how substantively new is O'Connor's version of ecological Marxism; second, how useful or otherwise is his exposition of the ecological problematic in terms of the second contradiction; third, what substantive limitations are there in O'Connor's approach and how might they be addressed in a way which seeks to progressively develop ecological Marxism.

a. Similarities in O'Connor's analysis and the earlier analysis of Gorz

O'Connor's exposition of ecological Marxism in terms of the second contradiction is certainly original although, as was noted

earlier, the focus on relations of reproduction is not itself new. Despite this, however, there are some marked similarities between O'Connor's approach to ecological Marxism and the earlier analysis of Gorz. Thus, the crisis which O'Connor identifies with the first contradiction of capitalism is termed by O'Connor a realisation crisis and by Gorz a crisis of over-accumulation. Both theorists follow the classical Marxian analysis in identifying the crisis of over accumulation with the contradiction between the increased production of commodities and the increased exploitation of labour which both result from increases in labour productivity required by competitive valorization. More significantly, the crisis that O'Connor identifies with the second contradiction of capital, which is termed by him a crisis of reproduction, is precisely the same characterisation deployed by Gorz. Thus, the key idea in O'Connor's ecological revision of Marxism, namely, that the ecological crisis is essentially a crisis of reproduction of the conditions of production, is not new. It forms an important component of Gorz's earlier exposition of ecological Marxism. This having been said, there are substantive differences in Gorz's and O'Connor's exposition of the relationship between accumulation, crisis and environmental degradation. These differences, it shall be argued, also indicate that the work of O'Connor is less coherent in providing the foundations for a Marxist ecology than is the earlier work of Gorz.

b. Methodological Differences Between O'Connor and Gorz and O'Connor's Substantive Errors

The first important difference between Gorz and O'Connor is that, whereas for O'Connor, environmental degradation features only in the second contradiction of capitalism, for Gorz, environmental degradation is a fundamental feature (along with labour exploitation) of *both* the first and the second contradiction. Thus, as was noted earlier, Gorz traces the historical emergence of the contemporary ecological crisis of *reproduction* (O'Connor's second contradiction crisis) to capital's 'resolution' in the Fordist era of the crisis of over accumulation. What is clear for Gorz is that ecological crisis has its roots in 'a classical crisis of over accumulation' which in the contemporary era has become 'aggravated by a crisis of reproduction' (Gorz, 1980: 27).

The second and closely related difference between O'Connor's and Gorz's expositions concerns the relationship

between the first and the second contradictions and their related crises. In O'Connor's highly abstract exposition there appear to be no mechanisms directly linking the first and the second contradictions. This sense of separation is heightened by O'Connor's insistence that while the site of the first contradiction—the exploitation of labour power—is internal to the logic of capital, the site of the second contradiction—the conditions of production—is external to the logic of capital. Why the conditions of production should be treated in this way as entirely exogenous to the process of valorization, merely because capitalism does not formally own these conditions, is not made clear. Moreover, while it may be useful for analytical purposes to distinguish between the first and the second contradictions of capitalism, it is equally important, as Lebowitz (1992) has noted, that such an analysis should not lose sight of the essential unity of the two contradictions.

What O'Connor's exposition fails to adequately comprehend is precisely the *dialectical* unity between capitalism's 'two' contradictions. This indicates a fundamental methodological problem in O'Connor's approach, which leads him into substantive errors. First, there is in O'Connor's analysis a complete failure to historicise concretely the different moments of accumulation, contradiction and crises. Rather, his methodological approach is to deploy analytical abstraction in a consciously ahistorical manner. By contrast, in Gorz's explicitly historical exposition there is a direct organic-dialectical linking between the crisis of *over*-production (the up-shot of O'Connor's first contradiction) and the crisis of reproduction (the up-shot of O'Connor's second contradiction). What Gorz thus provides, as was indicated above, is an historical account of the contradictory development of the accumulation process as a whole in which each crisis is marked by a necessary deepening of environmental degradation. Ecological crisis occurs when, as in the contemporary era, 'the [necessarily] destructive effects of production ... exceed the productive ones by depleting renewable resources more quickly than they can regenerate themselves' (Gorz, 1980: 21).

This methodological weakness in his approach leads O'Connor to a second substantive error. O'Connor's attempt to construct an ecological Marxism uniquely around the second contradiction of capitalism suffers from being too narrowly focused on the question of cost imperatives. While the cost

imperatives associated with competitive valorization are an important *particular* source of ecological degradation (cost externalisation), a more *general* source is the unbounded logic of commodity production itself as the means to valorization (discussed above).

In focusing exclusively on the second contradiction of capitalism O'Connor fails to recognise the two-fold nature of capital's relation to the conditions of production. On the one hand, capital '*pollutes*' the conditions of production in various ways. This has an essentially *qualitative* effect that renders more difficult the reproduction of the conditions of production and is, as we have already seen, the essence of O'Connor's second contradiction. But, on the other hand, capital also *exploits* the conditions of production. This it does in order to obtain the raw materials needed to produce commodities and develop the forces of production. This second, essentially *quantitative*, relationship of capital to the conditions of production, which is the primary source of resource *depletion*, is no less destructive of the environment than pollution that results more specifically from the externalisation of various costs. Indeed it is likely to be both more destructive and less manageable in environmental terms precisely because it is determined by the underlying logic of capital itself, namely, valorization through unbounded commodity production.

What, *in essence*, makes capitalism unsustainable in environmental terms is not merely its despoilation of the conditions of production—capitalism's 'dirty secret' according to Wallerstein. The pollution of the conditions of production is a problem common to *all* industrial systems. Rather, it is capitalism's need to commodify everything, to sell and produce ever greater quantities of commodities and to deepen the commodity form where it already exists that forces it to destroy the environment through depletion. This process is also noted by Wallerstein although, like O'Connor, the substantive focus of his ecological analysis is on capital's tendency to externalise costs and thereby pollute the environment.

Where the focus of environmentalism—and this includes particularly an allegedly Marxist ecology—is exclusively on the regulation of the conditions of production without a more general critique of the commodity form, the critique of specifically capitalist production is substantially missed. As Gorz (1994: 94) has succinctly put it, 'The ecological movement can't

be reduced to the demand that *the environment be protected* [emphasis added]. If it is, its demands will end up sooner or later being taken on board by capitalism—and nothing will have changed.’

Capitalism, therefore, is perfectly able to respond to the imposition of tougher environmental regulations—anti pollution taxes, the banning of certain toxic substances, production techniques and processes, the legal limitation of harmful gas emissions and waste dumping etc. It does this by developing new and *higher* forces of production. That is, capitalism responds to a crisis of the so-called second contradiction of capitalism by a faster technological development of the forces of production. In the short run, this may conflict with profitability and lead to O’Connor’s ‘crisis’ of capital scarcity—‘the under-production of capital’. Capitalism seeks to resolve this short term problem of increased technological costs by ‘socialising’ the necessary investment in green technology, in particular, by negotiating government procurement. As Gorz (1994: 94) notes, ‘Capitalism may develop a highly profitable eco-business, just as it developed a highly profitable arms industry, to meet public contracts’. Once developed, however, the new technology allows capitalism to meet the new, state-imposed, eco imperatives while keeping costs low and thereby restoring profitable accumulation. If costs can’t be lowered firms can pass on the burden of environmental regulation to the consumer in terms of higher prices and increased inequalities (Gorz, 1994: 94).

c. *The Political Implications of the ‘Two’ Contradictions of Capitalism*

O’Connor’s analytical distinction between the first and second contradiction of capitalism is followed through into the political analysis of agency determinations of and responses to these contradictions. To begin with, O’Connor maintains that the working out of both the first and the second contradiction leads, ‘inevitably’, to the development of what he terms ‘more social forms’. For example, the first contradiction leads to various social/state mediations of the forces and relations of production—state ownership of industry, trade unionism, redistribution etc. Similarly the working out of the second contradiction leads to more social forms in terms of greater regulation of the conditions of production—for example, anti

pollution legislation and controls, eco-taxes, etc, as well as greater state regulation of the labour process and the reproduction of labour-power (state health care, education, social housing and other welfare interventions, urban regulation, etc). The general result of these more social forms, according to O'Connor, is to subvert the private forms (private property) they transcend.

For O'Connor, the two different sources of 'more social forms' are indicative of the fact that there exists two distinct but complementary paths to socialism, the one leading from the progressive unfolding of the first contradiction and the other from the second contradiction of capitalism. While the first is associated with labour movement agency and its interaction with the state, the second is associated with new social movements and its interaction with the state. Once again, Marx was only 'half-right' in his analysis of capitalism and social transformation because he focused exclusively on the labour movement as the agency through which the contradictions of capitalism fed through into social change (O'Connor, 1988: 35). How does O'Connor relate the two contradictions of capitalism and the resulting two paths to socialism to contemporary political movements and struggles?

Firstly, O'Connor rather downplays the role played by agency in the emergence of 'more social forms' from the first contradiction of capitalism. Here, O'Connor seeks to emphasise instead contradictory structural processes internal to the dynamics of capital accumulation. Agency, including labour movement, responses to these processes give rise to more social forms; but agency remains subordinate to the laws of capital accumulation, merely reacting to the internal contradictions of that process as these unfold socially and impact directly on workers. This problem in his abstract analytical approach to the analysis of agency has been noted by Recio (1992) who argues that O'Connor's 'overly schematic approach is part of an interpretation of the dynamics of capitalism which assumes workers are merely passive subjects who adapt themselves to the impositions of capital'.

Secondly, O'Connor rather over-emphasises the role played by new social movements as the active agency in determining the 'more social forms' arising out of the second contradiction of capitalism. This over-emphasis on agency is evident in the following passage:

[T]he state places itself between capital and nature, or mediates capital and nature, with the immediate result that the *conditions* of capitalist production are politicized. This means that whether [the conditions of production] are available to capital in requisite quantities and qualities and at the right time and place depends on the political power of capital, the power of social movements which challenge particular capitalists forms of production conditions..., state structures which mediate or screen struggles over the definition and use of production conditions. [...] [W]hether or not capital faces '*external barriers*' to accumulation, including external barriers in the form of new social struggles over the definition and use of production conditions ... whether or not these '*external barriers*' take the form of economic crisis; and whether or not economic crisis is resolved in favor of or against capital are political and ideological questions first and foremost, economic questions only secondarily. This is so because production conditions are by definition politicized (unlike production itself)... (O'Connor, 1988:22-4)[emphases added].

O'Connor goes on to argue that 'more social forms' should not be confused with socialism or its immanence. Socialist agency may or may not contribute to the development of 'more social forms' out of the two contradictions of capitalism. Hence, socialism is not an inevitable outcome of either contradiction, although both independently provide platforms on which a socialist politics and transformation could potentially be built. O'Connor is thus careful not to subordinate either the agency of the labour movement or the new social movements to that of socialism.

The upshot of all this is that O'Connor privileges the new social movements as a potentially transformatory social agency. The labour movement is subordinate to the economic and the internal logic of capital accumulation. In this sense, its politics lack autonomy from capital. By contrast, the new social movements, whose politics are located around the conditions of production and the second contradiction of capitalism, represent independent agency, agency external to and transcendent of the logic of capital.

This attempt to separate out the different logics of political opposition to capital and to rank the different social movements in terms of their potential as agencies of social transformation leads O'Connor, once again, to lose sight of the dialectical unity in red and green political opposition to capital accumulation. This unity is not (or at least not merely) expressed by the existence of two separate paths of opposition to accumulation—one leading from production and the labour movement, the other from reproduction and the new social movements—but rather is evident, first and foremost, in the inherent unity of this opposition in the struggles of the labour movement.

d. Dialectical Unity in Economic and Ecological Crises and in Red-Green Politics

By contrast Gorz approaches the issue of Red-Green politics from a position which is informed by a theoretical assessment of accumulation and crisis that treats the 'two' contradictions of capitalism as historical moments in a dialectically unified process of struggle, a struggle in which the needs and interests of capital are set against the common interests of human beings in production and reproduction (see also Lebowitz, 1992). The common objective of all political movements opposing capital accumulation is to secure a better life for ordinary people and their families. A major insight of Gorz's political ecology is to show that this is only partially achieved by successfully fighting capital at the site of production relations, of exploitation (the first contradiction). Fighting capital at the site of production conditions has become increasingly important because, as Gorz observed, writing in 1971, the quality of life depends less and less on what people can buy and more and more on living better (Gorz, 1980 [1971]: 130-48). This means defending the existential framework of people's lives, including the conditions of production and the environment of their everyday life, from the encroachments of capital. But, as Lebowitz (1992) points out in his critique of O'Connor, these are not new concerns and objectives for the labour movement, grafted on to more traditional concerns as if to appease and secure solidarity with the new social movements. Labour movement demands for environmental regulations to protect the conditions of life are deeply rooted in labour movement principles and traditions which have long sought to defend workers autonomy from capital (e.g. struggles against the enclosure of common lands,

for the maintenance of siesta, for reduced working time, the defence of public welfare provision etc).

V. Bounding Capitalism: the Political Economy/Ecology of Self-Limitation

Writing in the 1970s, Gorz argued, contrary to the prevailing technocratic orthodoxy, that the ecological crisis could only be resolved by a social transformation which inverted the logic of capitalism, by marginalising valorization and commodity production—the logic of production for exchange—and replacing it with a system based on autonomous production and production for use (Gorz, 1980 [1974]: 3-10; 1980 [1975]: 27). Such a system would continue to make use of industrial technology and rationalised industrial processes as the most efficient way of meeting basic human needs. But material human needs would themselves be transformed, reflecting the requirements of autonomous, as opposed to alienated, humanity (Gorz, 1980 [1975]: 11-53). What makes such a system environmentally sustainable, according to Gorz, is the ecological rationality at the heart of the system and the fact that such as system, as it becomes dominant, spontaneously promotes values and practices of *self-limitation* (Gorz, 1993).

Gorz (1980 [1975]: 27) sums up the principle of ecological rationality in the slogan ‘less but better’. An ecologically based society is one in which we live more and better, produce better (multi-activity autonomous production), while consuming and working less (Gorz, 1994: 33). As Gorz elaborates, ecological rationality engages with the imperative of ‘resource conservation’ (*cf* resource exploitation under capitalism, referred to earlier) and as such it ‘consists in satisfying material needs in the best way possible with as small a quantity as possible of goods with a high use-value and durability, and thus doing so with a minimum of work, capital and natural resources’ (Gorz, 1994: 32). Thus:

Ecological modernisation requires that investment no longer serve the growth of the economy but its contraction—that is to say, it requires the sphere governed by economic rationality in the modern sense to shrink. There can be no ecological modernisation without restricting the dynamic of

capital accumulation and reducing consumption by self-imposed [emphasis added] restraint (Gorz, 1994: 33-4).

For Gorz, the key to understanding the logic of a socialist and democratic *ecology* is the recognition that, given an appropriate institutional environment, a politics of self-limitation develops its own subjective rationality. That is to say, people can be expected to incorporate ecological imperatives into their own value system and life-world if the institutional setting and the relationship this establishes between human beings, their activities and their environment is such as to encourage a consciousness of self-limitation. To understand this it is helpful to consider in rather more detail some of the key premises and assumptions of Gorz's vision of socialist humanity.

Gorz's analysis of a feasible socialist society starts from the classic, Aristotelian, distinction drawn between the 'realm of necessity' and the 'realm of freedom' (Gorz, 1989: 13-16, 164-71). By the realm of necessity Gorz means that part of human productive activity that is given over to meeting basic material subsistence needs, however these are to be defined. For Gorz 'capitalist rationality', including the market system, provides the most efficient method of organising the production of basic needs (Gorz, 1994: 29-32, 100). While it also involves alienated labour (what Gorz (1994: 166) refers to as 'heteronomous work'), because it is organised around an extensive division of labour and also because labour undertaken in the realm of necessity is merely a means to an end external to it, Gorz maintains that this is a universal problem that human beings must face. Socialism, Gorz insists, cannot abolish necessity.

What Gorz refers to as the 'realm of freedom' or 'sphere of autonomy' corresponds to human productive activity under taken outside or beyond the realm of capitalist rationality. This includes art, leisure, love, play or any activity that is not undertaken purely from material necessity or as a consequence of heteronomously imposed needs. Gorz is critical of capitalist production with respect to the realm of freedom in two respects. First, under capitalism the working day is extended beyond the time needed to meet basic material needs. Capitalist production thus encroaches upon 'free' time and 'production in autonomy'. Second, capitalism seeks to commercialise or commodify the realm of autonomy itself, to marginalise autonomy as a condition of its own political and economic dominance, by

manipulating needs and by creating what Gorz, following Marcuse, calls 'false needs'. This strategic extension of necessity by capital and the anti-ecological waste of physical resources it involves (not to mention the extended exploitation of labour resources) is summarised by Gorz as follows:

[H]eteronomous work, through the sale of which we procure almost all we need, also serves to produce superfluous goods or to incorporate in necessary goods useless elements whose real or supposed symbolic value merely serves, in modifying the image of the product, to increase its exchange value (its price). We are therefore less in thrall [than in the past] to the 'necessities' of existence than to the external determination of our lives and our activity by the imperatives of a social apparatus of production and organisation which provides willy-nilly both the essential and the superfluous, the economic and the anti-economic, the productive and the destructive.' (Gorz, 1989: 166)

For Gorz, the first and most important task facing political ecology is the overturning of the power relations of capitalist society so as to ensure that the realm of freedom can dominate the realm of necessity and economic rationality. This is the precondition for the inversion of the logic of valorization through commodity production (Gorz, 1980: 27). Achieving such a transformation of power relations is therefore the essential basis on which an ecological 'paradigm shift' from production for valorization to production for use can be secured. Within the paradigm of production for use the politics of ecology seeks a further transformation to a society that 'works less and produces less but lives more and better'.

For Gorz, the paradigm shift towards a sustainable system of economy and society does not involve the forcible abolition of the market system altogether or even of the logic of capital:

We have to distinguish between capitalism and the logic of capital. Capitalism is a social system in which life, activities, the scale of values, and the aims of individuals and society are all dominated by relations *subordinated* to economic rationality and the valorization of capital. The logic of capital, by contrast, *is the only form of pure economic rationality* [emphasis added] . (Gorz, 1994: 100)

Socialist ecology must aim, rather, to marginalise capital and subordinate it to human autonomy and ecological imperatives. Such a transformation would not bring an end to market exchange or industrial production, but it would sound the death-knell of what Wallerstein refers to as *historical* capitalism, a society where the institutions of capitalism are not only present but *all pervasive and dominant*, socially, culturally, politically and economically.

Like other leading socialist ecologists in Europe, notably the French political ecologist and *Les Vertes* MEP, Alain Lipietz (see Lipietz, 1995), Gorz has emphasised three structural or institutional changes which, taken together, provide the foundation for the paradigm shift towards ecological sustainability a socially co-ordinated policy of reduced working time, a substantial basic income guarantee independent of waged work, and the development of a 'third sector' of autonomous, multi-skilled activities and services (see Gorz, 1999).

The reduction of individual working time through a policy of reduced working hours is ecologically important, according to Gorz, because over-work is itself a condition for expanded commodity production and consumption (Gorz, 1994: 93). The expansion of alienated work reduces the amount of time and energy (labour power) individuals and groups have available for doing things for themselves. The loss of time and energy to waged labour in the capitalised sphere itself encourages the commodification of the sphere of autonomy. In this way consumption comes to further dominate everyday life. Furthermore, Gorz maintains, the democratic redistribution of the diminishing quantity of available skilled work confronts modern society as a social as well as an ecological imperative (Gorz, 1994: 12-13; Gorz, 1999: 93-100).

Gorz sees a *sufficient* guaranteed basic income independent of work as important in terms of ecological sustainability because it overturns the compulsion which characterises the capitalist labour market, a compulsion which draws human beings into the circuit of capital, commodifies them against their will and thereby forces them into alienated, non-sustainable, patterns of work and consumption (Gorz, 1999: 80-93). By abolishing the material and political basis of what Marx referred to as the formal subordination of labour to capital, namely, capital's monopoly over the means of production and subsistence (the precondition for the social domination o

capital), a sufficient basic income guarantee provides the individual with the social power necessary to define for themselves their relationship to the market economy and thereby actively regulate and limit this relationship in ways which express their freedom from capital and the commodity form.

Finally, Gorz argues that the development of a 'third sector' of autonomous, multi-activity provides communities with the physical and skill resources needed to develop autonomous, creative, activity and thereby effectively resist the commodification of needs and, therefore, the boundless expansion of production and consumption (Gorz, 1999: 72-80, 100-111). The resourcing of multi-skill activity by the state and voluntarily through Local Exchange Trading Systems (LETS), thus enables the development of all-rounded human beings who are able to define and meet their own needs in opposition to commodity consumption, the dominant form taken by manipulated needs (see Lodziak, 1995). (LETS are examined in more detail in Jim Shorthose's contribution to this issue on page 191).

Such institutional changes do not, of themselves, guarantee, in any prescriptive sense, a movement towards ecological sustainability. However, they provide individuals and communities with the institutional and material basis for regaining control over their relationship with work. Given such changes, Gorz maintains

individuals can (once again) become masters of their own destinies, their own way of life, the content and scope of their desires or needs and the extent of the efforts they are prepared to put in to meet them. [In this way] a critique of the capitalist consumption model and of social relations dominated by economic objectives and commodity exchange can be anchored. (Gorz, 1989: 159-60)

The institutional changes outlined above are thus the fundamental conditions necessary for the *possibility* of a more deep-rooted cultural and political shift towards a society of self limitation. They do not determine a society based on ecological sustainability but they do provide individuals and society as a whole with 'exit routes' (Gorz, 1999: 78) from the logic of valorization and commodification, over-work, over-production

and over-consumption. Within the limits of democratic ecology, according to Gorz, this is all that can be achieved.

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1. Wallerstein's emphasis on the rising cost of global labour, because of urbanisation and proletarianisation, as well as his assumption of profit squeeze, is not altogether persuasive in the absence of detailed empirical evidence. It can surely be argued, as Andrew McCulloch has pointed out to me, that despite on-going processes of urbanisation millions of people in Africa, Indonesia and South America remain wholly marginalised not least because of effective exclusion from the urban capitalist labour market. Furthermore Wallerstein's assumption that rising average labour costs must 'necessarily' lead to a fall in average profits is dependent upon a Ricardian formulation of the relationship between wages and profit which Marx showed to be false (Marx, 1975: 426-69).

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