

# A Marxist Approach to Understanding Ecology

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John Bellamy Foster, Brett Clark, and Richard York, **The Ecological Rift: Capitalism's War On The Earth**, Cornerstone Publications, Kharagpur (2010) ISBN: 978-81-88401-26-0 (Rs 300)

John Bellamy Foster, **The Ecological Revolution: Making Peace with the Planet**, Cornerstone Publications, Kharagpur (2009) ISBN: 978-81-88401-21-5 (Rs 160)

Our lives are inundated by alienation: auto-forwarding advertisements, 'memes' and 'selfies' replacing our self-consciousness; isolated faces in a crowd; people becoming machines (with wires emerging from ears and fingers bonding to keyboards, assembly lines, and steering wheels) and machines becoming artificial intelligence; a shortage of roti by people growing wheat; and people without drinking water in a rain forest of stumps. Over the past couple of hundred years, people have been facing increasing alienation at many levels: alienation from oneself, from each other, from our acts, from the things we produce, and from our environment - from nature itself. This last type of alienation - or rift - between humanity and nature is the concern of John Bellamy Foster, Brett Clark, and Richard York in **The Ecological Rift**. But this rift exists in interconnection to the other types of alienation, and the authors show that in the study of ecology we cannot avoid an analysis of the structure of capitalist society which produces them all.

This book as well as **The Ecological Revolution** by John Bellamy Foster provide resources and discussions on what can be done about the ecological crisis. As the title suggests, the solution is an eco-social revolution - a "massive and sudden change in the relation of humanity to the earth". The authors argue that the ecological rift cannot be solved by a 'sustainable development' that 'modernises' or makes technological fixes while sustaining capitalist development - because capitalism itself is the route cause of the problem.

The themes of the two books are similar, and most of their chapters have been previously published or presented elsewhere, although they have been adapted, revised and updated. **The Ecological Rift** is longer, and is a comprehensive and broad compilation of the work the authors have produced over more than 10 years of collaboration. **The Ecological Revolution** contains more discussion of the evidence for the current ecological crisis and its causes. Both books have useful indexes, as well as footnotes and voluminous references. Both were originally published by Monthly Review Press, the publisher of Monthly Review, which is edited by John Bellamy Foster. Both he and Richard York are professors of sociology at the University of Oregon in USA. Brett Clark is an associate professor of sociology at the University of Utah, USA.

The authors' method of analysis in both books is marxism. But what is marxism, and how is it related to nature and ecology? Their analysis of this question and how different people's responses to this question have evolved is a central focus of the books, and it is what I think make them particularly important reading for environmentalists and for anyone who is concerned about the environmental crisis (for further discussions, also see Bellamy Foster and Clark, 2016).

When we read the original works of Marx and Engels, we realise that they were certainly not armchair philosophers. Their writing shows that they have done research, made observations of physical reality, analysed evidence, reasoned, communicated, measured, modelled, compared, hypothesized, tested, and most important, continuously asked questions - even questioning their own answers. In other words, according to the most simple and general definition of the process of science, they have done science. This method of science may not always include all these aspects, and there is no particular order - actually many of these aspects are done simultaneously or as some sort of an interdependent network. However, I think we can agree that science, as so defined, is universal - in the sense that people throughout the world at least occasionally engage in this process when they ask questions, investigate, learn, and solve everyday problems.

However, some postmodernists, and even the so-called 'Western Marxists' and the "Frankfurt School", do not agree that the methods of science can be applied to social problems, claiming that to do so is a crude positivism or 'scientism'. Some scholars advocate a 'cultural' framework for social analysis which excludes non-human nature, or they may even replace the term 'social science' by an innocuous-sounding 'social studies'. Some scholars insist that there are other, equally 'correct' ways of 'knowing'. Some might even go so far as to say that 'science', 'religion', and 'magic' are equally valid 'ways of knowing'. If this is correct, then what does it mean for the study of ecology and the environment, which is certainly bound to the consideration of social issues? After several hours of 'knowing' magic (and perhaps even getting some solace through it), won't we have to do a little science to figure out how to fill our children's stomachs? How will we figure out what to do about a drought without doing science? Although the problems will vary, the same general methods of science are used by professional scientists investigating how climate is changing, by children figuring out how to grow a plant, and by workers digging a well. In all cases, following directions, listening to some authority, or 'knowing' (remembering) our ancestors' solutions does not get us very far.<sup>1</sup> Our environment keeps changing and we keep confronting new problems and new questions, for which we need to find new answers. When it comes to very large problems such as climate change caused by humans, we need to ask questions at a very basic level and be ready to make radical changes in our plans for the future. Magic will not work. Whether 'science' will work depends on our definition of science.

Marx and Engels use the word 'science' to describe their method, which we now call marxism. In his famous footnote to Chapter 15, *Capital*, Vol. I, Marx says that the method of science (and the method of doing history) is to develop from "the actual, given relations of life" the corresponding "celestialised forms" of those relations, rather than the reverse. In science, the basis of analysis is not just theories, ideas, or concepts - that would be an idealist, uncritical sort of deductive reasoning. Rather, according to Marx, the basis is material: science must be materialist and must include the historical process. But this science is not mechanical materialism or abstract empiricism. It is dialectical materialism. Thus, Marx says that a critical history of technology "reveals the active relation of man to nature, the direct process of the production of his life, and thereby it also lays bare the process of the production of the social relations of his life, and of the mental conceptions that flow from those relations."

These are dialectical relations. In a letter to Engels (31 July 1865), Marx mentioned that he had to write *Capital* as an "artistic whole" because it requires a dialectical structure. The best way to understand the meaning of dialectics is through an analysis of the dialectical method which Marx uses throughout *Capital*. His method of analysis is to use material evidence and find dialectical relationships in it - relationships which reveal contradictions that explain how motion occurs - why processes proceed the way they do.

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<sup>1</sup> I can attest that my own daughter, when she was 6 years old, learned more about how to grow a plant when she accidentally performed a science experiment by lovingly stroking a flowering potted plant to the point where the entire thing broke off into her hand (finding that her hypothesis of the amount of force it could sustain was wrong), than she did by listening to her authoritarian mother tell her to be gentle with it. (Yes, that is what I mean by doing science!)

Dialectical relations are opposing aspects that do not occur separately in time as causes and effects (that is why he could not write in some chronological order). They exist as a unity of inherent opposing forces.

Engels gives an explicit definition of “the laws of dialectics” as the transformation of quantity into quality, the interpenetration of opposites, and the law of the negation of the negation. However, his use of the term ‘law’ may be misleading if one interprets it as some sort of externally imposed law (of either economics or nature) which people or non-human nature are bound to follow. Rather, what might appear to be a ‘law’ actually emerges from the material basis itself, without self-consciousness or teleology (at least in the case of non-human nature). As Marx explains in his Postface to the Second Edition of *Capital*:

“[Dialectics] includes in its positive understanding of what exists a simultaneous recognition of its negation, its inevitable destruction; because it regards every historically developed form as being in a fluid state, in motion, and therefore grasps its transient aspect as well; and because it does not let itself be impressed by anything, being in its very essence critical and revolutionary.”

This means that all the aspects of the material basis simultaneously interact with each other. Thus, using a dialectical method, relations to (non-human) nature cannot be considered as being separate from social relations. They both cause each other and both effect each other, simultaneously.

However, according to Western Marxism (following arguments put forth by the early Lukács), a historical dialectical method is useful for social analysis, but is not applicable to non-human nature (natural science). This dialectical method is defined by the unity of subject and object, the unity of theory and practice, and historical changes in reality as the root causes of changes in thought. It is not nature itself that is dialectical, they claim, but rather, it is the social perception of nature that is dialectical. In some cases, their dialectics becomes a dialectic of ideas, or a dialectic of words or ‘word games’.

John Bellamy Foster and his colleagues argue against this view, and see it as veering towards idealism since it seems to deny that objective reality exists independently of consciousness (which is the basis of materialism). They give evidence that Lukács himself later repudiated his earlier views for this very reason, and they find fault with the refusal of social scientists to “engage critically with the reality of the natural world”. They present convincing arguments for both the existence of the dialectics of nature and the use of a historical dialectical materialist approach to study ecology.

In **The German Ideology** (1886), we read that there is “only one single science, the science of history”, which can be seen from two sides: the history of nature (‘natural history’ or ‘natural science’) and the history of people, although these two sides are inseparable and dependent on each other. Marx uses the term ‘history’ here not to refer to the human account or study of nature or society, but to the development or change in time of things themselves, i.e. to processes in nature/society. He is saying that these processes exist as a dialectical relationship: a unity of social and natural processes. He uses the word ‘science’ to refer to the human process of investigating and understanding these processes.

In the original manuscript, Marx apparently crossed out the paragraph in which he had written this, leading scholars to argue about what interpretation of Marxism is the most Marxist. However, it is inline with his other work in which he discusses the nature of science. For example, he wrote of science as being a process based on observation - a dialectical process, in that the relationship between subject and object is dialectical. As quoted in **The Ecological Rift**:

“Sense experience (see Feuerbach), must be the basis of all science. Science is only genuine science when it proceeds from sense experience, in the two forms of sense perception and sensuous need; i.e. only when it proceeds from nature... Natural science will one day incorporate the science of man, just as the science of man will incorporate natural science; there will be a single science... The first object for man—man himself—is nature, sense experience; and the particular sensuous human faculties, which can only find objective realization in natural objects, can only

attain self-knowledge in the science of natural being." (Marx 1844)

This makes it clear that Marx is not using a positivist understanding of science. He sees science as a dialectical process which is concerned with the inner connection of relations, rather than any "direct form of manifestation of relations" (Letter from Marx to Engels, 1867). The dialectical method which we use when we do science is necessarily socially mediated - human praxis and theory (consciousness) are dialectically related. This does not mean that objective reality does not exist, but only that our perception of it is interdependent with our interactions with it. Science is a social process of investigating physical reality, and its findings are contingent and probabilistic and keep evolving throughout the process.

Thus, the method of marxism is the method of science in its most general form, which is historical dialectical materialism. Besides being a method of analysis, historical dialectical materialism also describes the nature of nature/society itself.

Following Steven and Hillary Rose, Richard Levins, Richard Lewontin, and Stephen Jay Gould, in Chapter 11 (The Dialectics of Nature and Marxist Ecology) of **The Ecological Rift**, John Bellamy Foster presents a persuasive argument that nature is dialectical - and that it is a unity of the human and the non-human existing in an interdependent dialectical relationship. The dialectics of nature was first discussed by Engels (The Dialectics of Nature, ref), and we have seen how his claims were one of the points of contention which led to the formation of 'Western Marxism'. While trying to distance himself from what he calls "Stalinist dogma" or "Soviet Marxism", Bellamy Foster has defended Engels claim that "nature is the proof of dialectics". His contribution is to extend it to show that "ecology is the proof of dialectics".

Thus, ecological science has shown how gradual quantitative changes in our environment can reach 'tipping points' at which sudden, qualitative, irreversible changes occur. For example, as discussed in **The Ecological Revolution**, the global crises which are near or past 'tipping points' of no return include climate change, biodiversity loss, changes in nitrogen and phosphorus cycles, ocean acidification, crises in land and freshwater usage, atmospheric aerosol overloading, and chemical pollution. This mirrors Engels' definition of dialectics. The reason that some people have a hard time believing that such things can happen is that they are thinking mechanically rather than dialectically. But, as Bellamy Foster explains, "Neither natural history nor social history could be conceived as static; each was complex and forever changing, embodying contingent, emergent, and irreversible aspects, and above all interconnectedness."

Marxists have faced the criticism that Marx advocated that people should control nature. This stems, for example, from Engels statement: "...man by his changes makes [nature] serve his ends, masters it." Some environmentalists claim that the mindset of people 'controlling nature' is what has caused the environmental crisis. However, in order to examine what Marx and Engels actually meant, we need to examine what labour is. How can one define labour - or even, how can one define human life itself - without realising that it involves people making use of (in other words appropriating, or controlling) their environment? But according to historical dialectical materialism, we also find that this process is dialectical: people change the environment as the environment simultaneously changes people. As Marx wrote,

"Labour is, first of all, a process between man<sup>2</sup> and nature, a process by which man, through his own actions, mediates, regulates and controls the metabolism between himself and nature. He confronts the materials of nature as a force of nature. He sets in motion the natural forces that belong to his own body, his arms, legs, head and hands, in order to appropriate the materials of nature in a form adapted to his own needs. Through this movement he acts upon external nature and changes it, and in this way he simultaneously changes his own nature."

"... [The labour process] is an appropriation of what exists in nature for the requirements of man. It

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<sup>2</sup> We need to point out that he should have written 'people' rather than 'man'.

is the universal condition for the metabolic interaction (Stoffwechsel] between man and nature: the everlasting nature-imposed condition of human existence..." (Capital, Vol I)

Bellamy Foster, following Marx, goes on to discuss how production and capitalism have evolved not only to satisfy people's needs, but to create new needs. The dialectical inversion of use values (needs) and exchange values reflects a system in which the pursuit of exchange value becomes an end in itself - but a limitless end with endless dissatisfaction, which generates an accelerating and endless 'treadmill of production', reproduction of capital, and an endless desire for endlessly increasing 'profits'.

However, he explains, there is a metabolic interaction between humans and the earth (non-human nature). This metabolism is in the process of being distorted and disrupted due to the effects of the treadmill of production. Rifts between people and nature are appearing at many junctures. For example, there is a rift between human beings and the soil. Marx himself mentioned how nutrients were being lost from the soil because they were being extracted by the plants that produce the food which is transported to far-off cities. The nutrients in the form of waste are eventually disposed into rivers which transport them into the sea rather than back into the land of their origin. The cities developed as a result of the capitalist development of industry and trade, and Marx points out how large-scale industry lays waste labour power while industrial agriculture lays waste the soil. Produce from the soil is exported with no import of materials for manuring in return.<sup>3</sup>

**The Ecological Rift** brings this history forward, showing how this metabolic rift led to a shift to a new source for fertilisers, which created a series of new rifts and shifts, from one area to another. In the 19th century Britain alleviated its problem of soil depletion by importing guano from Peru. Chinese coolies were imported as virtual slave labourers. As guano was depleted, there was a shift to the export of nitrate from fields discovered in Peru and other countries of Latin America, and wars erupted between the countries which were competing to meet the demands for fertilisers for the imperial powers in Europe. Then there was a shift to the production of chemical fertilisers in Europe. With each shift in source or technological advance, new rifts have appeared. Since nitrates are used not only as fertilisers but also for the manufacture of explosives, they have played a central role in the development of the military industrial complex. Thus, history was driven by the contradictions between capital's need to keep multiplying itself, the depletion of soil nutrients in Europe, the one-way movement of natural resources to meet imperial interests, and the inhuman exploitation of human labour. Capitalism has always involved human/environmental degradation. We are reminded of the more recent contradictions in capital which drove industries in the USA to make chemical weapons during the Second World War, and then shift their efforts to the production of chemical fertilisers. Capitalists parading as 'Green Revolutionists' began exporting the fertilisers to India, and then getting their overseas factories to produce them at a bargain rate. In Bhopal this plan was disrupted by another rift in the form of an Industrial 'accident' which continues to contaminate the soil.

All of these examples, and actually the study of ecology itself, is the history of interactions, interconnections, and interdependencies between natural/social processes - which are basic aspects of historical dialectical materialism, with its main tenet that everything keeps changing (Levins and Lewontin, 1985). This contrasts with a world view in which there is thought to be a "Balance of Nature". This view, and a sort of 'holistic' approach, was adopted by some of the earliest western ecologists in the early twentieth century. In Chapter 12 and in Chapter 14 (The Sociology of Ecology) of **The Ecological Rift**, the authors discuss this and the interesting history of the development of the field of ecology and its social and political relations. Although their approach is materialist (and thus realist), they also embrace to some

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<sup>3</sup> This led to the demand in the Communist Manifesto for the "gradual abolition of all the distinction between town (and country by a more equable distribution of the populace over the country".

extent a human-historical constructionism, without turning towards idealist relativism or dualism.

According to Frederic Clements, who originally dominated the field, a community (all the organisms living in a particular place) is the expression of a general organising principle: some sort of harmony or 'Balance of Nature'. The Clementsian paradigm is idealist, since rather than being explained by processes in physical reality and their interactions with each other, the characteristics of the community are explained as being the way they are because they must adhere to an abstract principle. The abstract principal is basic. For example, if a forest was converted into farmland and then deserted, it was believed that the vegetation had a tendency to return to its original state of equilibrium (which depended only on the climate). This paradigm is also teleological, because it assumes that a community exists as it does in order to maintain a 'balance'.

Jan Christian Smuts<sup>4</sup>, the notorious racist South African Prime Minister (the architect of apartheid), influenced Clements and the development of an idealist sort of ecology through his theory of 'holism', as a conscious antidote to a materialist approach. He proposed that an inherent characteristic of the universe is its drive towards higher organised 'wholes'. He interpreted evolution as a teleological progression towards perfection, and divided the world (and human society) into a hierarchy of 'wholes'.

These idealist and teleological sorts of ecology were countered by the materialist ecosystems analysis approach of Arthur Tansley. He provided evidence against the existence of any progressive ecological succession, against teleology, and against the existence of 'holism'. John Bellamy Foster and Brett Clark argue that he does this while still managing to avoid being overly reductionist, and the field of ecology has benefitted to the extent that it has followed Tansley rather than Clements and Smuts.

The idea of a Balance of Nature has a long history, and can be found in various cultures throughout the world (Cuddington 2001). Its prevalence and persistence is perhaps because people have a longing for a harmonious, unchanging, unending existence. In the past, some scientists claimed that population dynamics (e.g. differential rates of reproduction of predators and prey), provided evidence for a Balance of Nature. However, it now appears that they paid insufficient attention to randomness in nature, the extinction of species, and large oscillations in population density.

Even Charles Darwin mentioned some sort of Balance of Nature at several places in his writings, but he denied that there is any perfect balance:

"For as all the inhabitants of each country are struggling together with nicely balanced forces, extremely slight modifications in the structure or habits of one species would often give it an advantage over others; and still further modifications of the same kind would often still further increase the advantage, as long as the species continued under the same conditions of life and profited by similar means of subsistence and defence. No country can be named in which all the native inhabitants are now so perfectly adapted to each other and to the physical conditions under which they live, that none of them could be still better adapted or improved ..." (Darwin 1872)

Darwin's main contribution to science was that he found evidence that non-teleological natural selection is a mechanism of evolutionary change. With an understanding of evolution and its mechanisms, it becomes clear that if nature did adhere to a strict 'balance', life could not exist or evolve. Indeed, interdependent and continuous change and imbalance is an essential characteristic of nature.

People speak and write about 'the timeless past', 'unchanging, harmonious rural life', 'balanced' human physiology, and other forms of 'the Balance of Nature'. But are these really accurate descriptions of physical reality? How stable is the world? Is there a 'Balance of Nature'? Perhaps, underneath the ideology

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<sup>4</sup> In case you are looking for evidence for the ideology of wikipedia, compare their entry on Smuts with the account given in The Ecological Rift! If you want to confirm your suspicions, try to modify the wikipedia page and see what happens.

of natural balance, there is a realisation that actually processes in the real world are not so balanced or stable. Change is quite obvious - perhaps less so to those of us who are hardly engaged in physical labour, but more so to those of us who are agriculturists and workers who intimately observe - and change - our environment.

The main reason for doubting the existence of stability is the overwhelming evidence of unceasing change even at the level of the relatively small timescales which are available to human memory. Was there ever a time in which one generation did not see changes in their surroundings, foods, diseases, languages, neighbours, clothing, shelter, art, and technology? For example, potatoes and tomatoes did not exist in India before the 1500's, tea was not a common drink before the 1700's. The kinds of Hindi and Urdu that are spoken in Delhi today could not have been understood before the 1600's. New pests keep evolving and attacking crops. New varieties of animals are bred, communities migrate or perish due to floods, famines, desertification, and war. Even in ancient times entire peoples were wiped out as a result of human actions which caused droughts, extinctions of species, and other environmental problems such as the destruction of Easter Island, which is discussed in **The Ecological Revolution**. On larger time-scales, the earth has continuously been experiencing extinctions, climate change, and geological upheaval. It is estimated that more than 95% of all species that have ever existed on earth became extinct before the existence of humans. The origination of life itself drastically and irreversibly changed the atmosphere of earth by generating O<sub>2</sub> and the ozone layer, producing an environment in which life can no longer be spontaneously generated.

In relation to the environmental crisis, the main problem with believing in a Balance of Nature is that it often leads to an assumption that the solution to the problem is to simply stop polluting, stop using so much energy and natural resources, and let things go back to their normal, balanced state. However, we do not find evidence that abandoning a biotic community which has been disturbed by human actions will result in it returning to any previous state, or to any state of equilibrium at any relevant scale of measurement. Since there is no force which will cause a Balance of Nature, the solution to environmental degradation cannot be to just leave things alone and let them go back to their natural balance. Actually, there never was a 'timeless past' or a 'balance in nature'.

Of course, humans do disturb nature, and realising that there is no Balance of Nature does not excuse or justify the destructive effects. It would be a mistake to site the absence of a Balance of Nature in order to rationalise or deny the existence of the environmental crisis. That would be like saying that there is nothing wrong with poisoning a person since their eventual death is inevitable.

There is no doubt that since the beginning of capitalism, people have changed life and nature itself at a rate and to an extent which they have never done in the past. Part One of **The Ecological Revolution** outlines some of these changes. These changes are not changes that people have planned or desired. They have arisen from the inner contradictions of capitalism. But the changes threaten to disrupt both the capitalist system and the wider natural environment. Indeed, they are proving the dialectical unity of humanity and non-human nature.

However, we might question whether Bellamy Foster, or even Marx himself, are to some extent conceding to a 'Balance of Nature' paradigm when they raise the problem of the estrangement or rift arising in the metabolism between humanity and nature. Are they implying that the rift is an upset in the Balance of Nature? Or, according to one alternative explanation, is this rift simply a change in the metabolism - a change which is inevitable, necessary, or even a positive aspect of social development, just as capitalism itself is a necessary or positive development over feudal modes of production?

When Marx mentioned the "metabolic rift" it was with regard to the depletion of nutrients from soil as a result of agricultural products being sent to cities (as mentioned above). This could be interpreted to mean that people are disrupting a natural, balanced nutrient cycle in which soil is replenished. But there is

evidence that there is no strict balance of nutrients in soil. Even before people existed on earth, the soil kept changing along with changes in vegetation, and a depletion of nutrients has caused the extinction of some species of plants. Is Marx's assertion therefore problematic? Is any change in soil nutrients detrimental? Detrimental to whom or to what? Or is it just a matter of the extent of the disruption? Or is a disruption wrong only because it is done by humans rather than non-human nature? But, if imbalances occur even without people, why is this wrong?

I think we cannot consider a rift to be detrimental unless we consider the extent of its effects and the effect on humans as well as nature. If we take an extremely unanthropocentric view, changes in ecology are wrong only if we think it is immoral for humans to have too large an effect over non-human nature. But such an idealist plea for morality for the sake of morality is both hard to define and hard to defend. A historical dialectical materialist defence of Marx's argument is that the rift in metabolism between humans and nature is detrimental because (and to the extent to which) it is oppressive to labourers and to nature/society (the dialectic, inseparable unity of human and non-human nature).

When Marx wrote about alienation in his **Economic & Philosophic Manuscripts of 1844**, he discussed it in contrast to an earlier way of life when people produced things from external nature (natural resources) for their own use. He wrote of the alienation between humanity and nature as being the physical alienation of labourers from the products which they produce from nature, as well as the loss of their use of nature for their own sustenance:

"Thus the more the worker by his labour appropriates the external world, sensuous nature, the more he deprives himself of means of life in two respects: first, in that the sensuous external world more and more ceases to be an object belonging to his labour – to be his labour's means of life; and, second, in that it more and more ceases to be means of life in the immediate sense, means for the physical subsistence of the worker." (Marx 1844)

As **The Ecological Rift** puts it, "The world is really one indivisible whole. The rift that threatens today to tear apart and destroy that whole is a product of artificial divisions within humanity, alienating us from the material-natural conditions of our existence and from succeeding generations."

This does not imply some kind of a Gandhian longing for a romanticised past village life. Rather, it calls for radical, conscious and purposeful changes in the life activity that makes humans human, and distinguishes us from other species. These books stand against a world view in which nature, "when unmolested by industrial society", is thought to exist "in a grand harmonious order that human beings must be in sync with if we are to overcome environmental crises".

Thus, in addition to discussing the metabolic rift and the treadmill of production, the authors focus on one more destructive relation between capitalism and the environment: how the inner contradiction between capital's requirement for constantly expanding growth and the limited human/natural resources and other environmental pressures undermine its own existence. They warn that if we do not radically change course very soon, we will be confronting "planetary ecological collapse".

Some marxists, such as David Harvey, have pointed out that while this contradiction certainly exists, there is a risk of 'crying wolf' by declaring that the world is at the edge of a catastrophe. If things do not break down as soon as expected, the ground for the arguments will be disputed, and he furthermore seems to think that this breakdown is not so imminent. He stresses that in capitalism, "Contradictions have the nasty habit of not being resolved but merely moved around", but through this shiftiness it has been able to prevent itself from causing its own downfall (Harvey, 2015). John Bellamy Foster concurs, quoting Marx:

Capital appears to tear "down all barriers which hem in the development of the forces of production, the expansion of needs, the all-sided development of production, and the exploitation and exchange of natural and mental forces." But, actually, "...it does not by any means follow that it



has really overcome it, and, since every barrier contradicts its character, its production moves in contradictions which are constantly overcome, but just as constantly posited.” (**The Ecological Revolution**, p.230 - quoting Marx from Grundrisse)

As discussed in these books, capital has always resorted to making the minimal changes that will somehow ‘get it off the hook’: coal is replaced by oil and nuclear power, waste is shipped off to poorer countries, and various technological quick-fixes are implemented. The entire program of ‘Ecological Modernisation’ - or Green-capitalism - has devoted itself to this task, even by commodifying environmentalism and selling it off in the form of ‘organic’ food and ‘environment-friendly’ toilet paper. It was because of the development of this sort of ‘environmentalism’, and the suppression of eco-marxism (see, for example Chapter 3 on Rachel Carson in **The Ecological Revolution**), that the ecological movement of the 1970’s in the west was sometimes seen as a detraction from marxism.

David Harvey points out that through such means, so far capital has managed to avoid ecological disaster, and this has been possible because capital internalises nature within itself. However, this unity between capital and nature, is dialectical and contains its own contradictions. Based on the situation in India at the moment, I do not think Bellamy Foster’s warnings are exaggerated or inappropriate. The risk is rather of capital’s success at herding people into a self-righteous complacency in which they seem not to be aware of the urgency of the ecological crisis. It is not as if there is no ‘wolf’. There are already several ‘wolves’ amongst us<sup>5</sup>, but those in power as well as those who are relatively well-off ignore the problems that most people face. We are being led to think that environmental problems are separate from the capitalist structure of society. Capitalism has already failed - the problem is that not enough of us have recognised the failure and figured out what to do about it.

The main achievement of these books is that they show how a historical dialectical materialist approach provides the means to understand ecology: the complex interactions and interdependencies between humans, non-human life and the rest of the environment. They demonstrate why this, the marxist approach, is necessary and other approaches are inadequate or misleading. However, there is a risk that such efforts may be mistaken as just aiming to defend a particular version of marxism on the basis of an appeal to authority. Although they do show that Marx had a correct analysis of ecology and environmental problems, what is more important is that we can use this method to extend the analysis. And these books show that the authors have succeeded in using it to extend the analysis.

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<sup>5</sup> Perhaps David Harvey would rather that we use the metaphor of vampires than wolves, since it sounds more marxist?