Article

Ecological Crisis and the Logic of Capital

Sociological Bulletin
67(3) 275–289

SAGE Publications
sagepub.in/home.nav
DOI: 10.1177/0038022918796382
http://journals.sagepub.com/home/sob

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Abstract

This article draws out the contradictions in the relationship between capitalism as a mode of production and our contemporary efforts to deal with the breaching of planetary boundaries or the ecological crisis. First, it looks at the theoretical developments in understanding the source of our current ecological crisis. The historical establishment of a metabolic rift and the shifts engendered as solutions to this problem within capitalism are discussed. Then, it focuses on the problem of perception of the ecological crisis in the contemporary world. An unequal world cannot be a sustainable world as standpoint influences even the perception of an impending precipice, and consequently any form of collective action. Given this inability to understand the crisis, the solutions that emerge are reductive and tend to spatially, temporally or socially shift the problem rather than resolve it. Finally, it argues that environmentalism—or efforts to 'save the planet'—needs to be understood based on the understanding of the problem rather than on social location of its members.

Keywords

Ecological crisis, types of environmentalism, environmental philosophy, metabolic rift, Anthropocene, planetary boundaries

What is the Ecological Crisis? Planetary Boundaries in the Anthropocene

The ecological crisis we face today is the potential destruction of conditions that sustain human life on earth. All currently available indicators point to a cascading change in the earth's bio-geo processes that may make it difficult, if not impossible, for the human species to survive. Rather than focus on a single apocalyptic event that is the threat to the survival of our species, some scientists instead highlight a

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range of thresholds that are significant for sustaining human life on earth. Apart from climate change, which has grabbed the most attention and generated most controversy, a group of scientists have identified eight other 'planetary boundaries' (Rockström et al., 2009) that are crucial to maintaining human life on earth: ocean acidification, stratospheric ozone depletion, the nitrogen and phosphorus cycles, global fresh water use, change in land use, biodiversity loss, atmospheric aerosol loading and chemical pollution. Each of these attributes of the earth system that is essential to sustain human life is under varying degrees of threat; some are beyond the tipping point, meaning they have crossed sustainability limits. On some others, given the state of our science, we are yet to fully understand the dimensions and consequences of current changes in these attributes.

These planetary transformations have a significant human imprint, which can be traced specifically to the beginning of the industrial age and capitalism. This imprint is so substantial that geologists are seriously considering declaring this a distinct geological era, named the Anthropocene (Crutzen, 2002; Steffan, Crutzen, & McNeil, 2007). The stable intergalactic period called the Holocene ends with the beginning of the industrial age, and the Anthropocene marks a geological period where human species has a substantial transformative impact on the earth system. The concept of the Anthropocene is significant because it highlights the fact that humans are a part of the earth ecosystem, constantly transforming it and in turn affected by it. Tracing the Anthropocene to the beginning of industrial capitalism points to a complex relation between humans and their habitat, where humans transform nature not only as a biological species and abstract individuals, but also through human social organisation.

One of the limitations of the idea of the Anthropocene is its presentation of humanity as a singular, homogenous, collective actor. While all of humanity is implicated in the dominant mode of production, Moore (2015) argues that the focus on the Anthropocene leads to the misrecognition of humanity as a 'collective' actor and it reinforces a Cartesian dualism that assigns nature and humans as distinct actors. Instead, he suggests the term Capitalocene that underlines the process through which we are in the state we have come to be rather than an emphasis on the condition we are in.

The relevance of examining the logic of capitalism closely with respect to its relationship to nature has been emphasised much earlier, although it did not garner much attention until recently. Mainstream economics emphasises the relationship of the market to nature rather than that of capitalism. Extreme environmentalist traditions reject modernity or science in its entirety without examining its particular capitalist trajectory. In 1988, James O'Connor's 'second contradiction of capital' emerged as an important theoretical insight that sought to examine the relationship of the contemporary ecological crisis to capitalism. Elaborating on the idea of capitalism as a system driven by its internal contradictions, specifically the contradiction between the forces of production and the relations of production, O'Connor (1988, 1998) identifies a second source of contradiction within capitalism, that is, between the forces and relations of production combined and the conditions of production. This provided an understanding of the emergence of a wide array of social movements engaged with the issue of the environment and

suggested that ecological transformations were a crisis of capitalism. However, it is Foster's (1999, 2000) work highlighting fundamental insights within Marx's work on the human/nature relationship that generated a more fundamental debate around the nature of capitalism, consequences of its inevitable transformation of ecosystems and its potential (or lack thereof) for resolving the crisis. This brought back into discussion a materialist understanding of the relationship between nature and capitalism, and showed that the planetary crisis threatens more than economic systems (Clark & Foster, 2012). The regime of capital is critiqued as carrying the seeds of destruction within itself and being inherently a globally destructive force (Foster, Clark, & York, 2011).

Drawing from this literature, this article will draw out the contradictions in the relationship between capitalism as a mode of production and our contemporary efforts to deal with the breaching of planetary boundaries or the ecological crisis. The first section of this article summarises theoretical developments in understanding the sources of our current ecological crisis. The historical establishment of a metabolic rift and the shifts engendered as solutions to this problem within capitalism are discussed. The second section focuses on the problem of perception and understanding of the ecological crisis in the contemporary world. Standpoints in unequal society affect our perspectives on ecological and social transformations. An unequal world cannot be a sustainable world as standpoint influences even the perception of an impending precipice and consequently hinders any form of collective action. Solutions that emerge from such a partial and reductive understanding of the problem are reductive and tend to spatially, temporally or socially shift the problem rather than resolve it. Therefore, the final section argues that various forms of environmentalism need to be understood based on their understanding of the problem rather than primarily on social location of its proponents, although the later influences the former. Anthropocentric, ecocentric and metabolic perspectives within environmental movements are elaborated. These philosophical moorings of environmental movements are not only academically relevant but also central in our efforts to overcome our current ecological crisis.

The Metabolic Rift

Foster's (1999, 2010) work highlighted Marx's prescient understanding of the human–nature relationship as a metabolic relationship where there is a constant flow and recycling of energy and matter between human and non-human nature. Humans as a part of nature also constantly transform it while transforming themselves. However, the emergence of capitalism generated a rift that disrupts this smooth metabolism. Marx draws from the work of German chemist Justus Freiherr von Liebig to elaborate on the metabolic rift that is produced by the separation of town and country engendered initially by capitalism. With the first wave of industrialisation, for the first time, the agricultural output consumed by human populations is not recycled back into the field. Food produced by utilising soil nutrients in the country is transported to the town for consumption of workers concentrated here; the waste generated in urban centres has no way of recycling back into the agricultural soil and is washed out to sea. The link between what is

extracted from the soil and what is recycled back into it is thus broken, resulting in the accumulation of waste in the town and the depletion of nutrients in the soil in the country. A rift is created in the cycle of nutrients from the soil into human bodies and back into the soil. While agriculture itself is a process where the nutrients of the soil are transformed into food that is consumed by people for their sustenance, in the metabolic cycle between humans and nature, human waste is recycled back into the soil. This rift in human–nature metabolism is not generated by agriculture per se, but by the separation of town and country that underlies capitalist organisation of production.

Marx goes on to describe how capitalism deals with this metabolic rift. As agricultural soil is robbed of its nutrients by the organisation of production that segregates town and country, nutrients now have to be added to this soil by transporting it from other locations. Imperialism provides the proximate solution; nutrients are imported from the colonies, using war, colonisation and slave labour. In the 19th century, Clark and Foster (2009) describe, how China, Peru, Chile, Britain and the United States were linked through a global metabolic rift. Armies and wars were put to work to bring manure from distant colonies. The problem of British agriculture was 'solved' through Guano imperialism, where entire islands were colonised and slave labour used to remove and transport bird shit across continents. The problem of loss of soil fertility in England was thus shifted to the colonies through colonial depredations. Therefore, 'ecological imperialism has meant that the worst forms of ecological destruction in terms of pillage of resources and disruptions of sustainable relations to the earth, fall on the periphery rather than the center' (ibid., p. 330).

The development of chemical fertilisers marked the end of Guano imperialism, when commercially produced fertilisers replaced the nutrients stolen from the soil through capitalist agriculture. However, a disrupted metabolic cycle is not easily fixed without addressing the causal factors. Technological innovation—the development of chemical fertilisers—only provides temporary relief. Over the next century, excessive fertiliser use in intensive capitalist agriculture resulted in further ecological problems including extinction of pollinators, mutation of crop pests and poisoning of soil and water that contaminated the food chain. These impacts are only too familiar in India by examining the critical literature on the long-term impacts of the Green Revolution (e.g., Shiva, 2016). In response to each of these problems, technological market solutions simply postpone, transform or shift the problem temporarily.

Examining contemporary global development and economic flows, several scholars have revealed disruptions of the material–ecological flows accompanying uneven development characteristic of capitalism (Burkett, 1999; Clark & Foster, 2009; Hornborg, 2003). This particular understanding of our present ecological crisis demands an examination of our fundamental relationship with nature and processes that affect this relationship. It also centrally implicates the organisation of production and reproduction that under-grids our relationship to nature. An understanding of this metabolic rift underlines the depth of the problem that we refer to here as the ecological crisis and the limitations of our current efforts to

deal with this. The problem is not merely the perceptible changes in temperature or sea level rise. These are critical symptoms that are cause for concern. The deeper problem is a rift in a most basic human/nature relationship. Symptomatic redress only tends to shift the problem spatially, temporally or socially, and fails to transform conditions that create the crisis.

Standpoint and Responses to the Ecological Crisis

Climate change is perhaps the best known planetary boundary and one of the two which many scientists claim, where the tipping point has been crossed. Rise in global temperatures and increase in the frequency of extreme weather events have been recorded consistently enough to convince most sceptics to be at least concerned. While climate change denialists today are fewer in number, it is significant that it is often an opinion held by the most powerful and most consumptive societies and individuals, who contribute significantly to climate change.

Recognition of 'standpoint', drawing from feminist theory (Harding, 1986; Jaggar, 1983), allows us to understand the complexity of dealing with planetary boundaries in an unequal world. Feminist standpoint theory emphasises the situated nature of knowledge, and the relationship between the material experience, power and epistemology. Material experience and social location considerably influence human experience of ecological changes, even though these changes cumulatively constitute an indivisible common threat to existence of all humans. The world's most disadvantaged people are saddled with the burden of environmental degradation disproportionately: they have contributed the least to the damages so far since they have not been recipients of the benefits of development, they have suffered most from the damages caused whether it is climate change or loss of forests or toxic pollution, and they are forced to bear a heavier share of the considerable costs of the clean-up or preservationist agendas while having the least opportunity to influence policies on these issues. For instance, growing evidence suggests that the impacts of observed and future climate change are and will be spatially and socially differentiated (Adger, 2006; Shue, 1999). The worst effects of climate change will fall disproportionately on those living in sub-Saharan Africa, small islands in the Pacific and Indian oceans, and deltaic regions of South and Southeast Asia, Egypt and China (Intergovernmental Panel on Climate Change [IPCC], 2007). Climate change is expected to hit developing regions the hardest. Its effects such as higher temperatures, changes in precipitation patterns, rising sea levels and frequent weather-related disasters will pose a risk to food and water supplies. Evidence shows that not only are the poorest people often more exposed to specific climate change impacts, but they also are more vulnerable to those impacts and find it harder to recover when they occur (Adger, 2006). Climate change will widen existing inequalities, globally and locally. The extent of vulnerability will depend on more than just terrain and climatic conditions: 'the fraction of the population living in low-lying regions, the area and proportion of the country inundated, its wealth and economic conditions, and its prevailing political institutions and infrastructure will all be of relevance' (Byravan & Rajan, 2010, p. 240).

Countries with more control over resources may be able to better adapt to changes. Even within developed countries, studies have shown that climate change will disproportionately affect the poorest in society. Wolstenholme's (2009) research shows that the people who are likely to be most vulnerable to the impacts of climate change are those living in places at risk, people who are already deprived by the health, level of income, the quality of their homes and mobility as well as people who lack awareness of the risks of climate change, the capacity to adapt, and who are less well supported by family, friends and state and non-state agencies. United Nations Development Programme (UNDP, 2011) reports also show that the most disadvantaged people suffer the most from environmental degradation, including in their immediate personal environment, and disproportionately lack political power to do anything about it. No one, however resourceful or powerful, will remain unaffected by the planet-level transformations that are happening. But the gradual and often invisibilised nature of climate change or environmental transformations allows differential appreciation of the crisis. So the urgency of the problem is differentially experienced. This differential experience, apart from important questions of justice and ethical responsibility, raises the challenge of differential perception and understanding of the nature of the ecological crisis. Responses to climate change reflect these material subjectivities.

Another explanation for fragmented appreciation of the severity of the current crisis relates to differential expectations for the future based on experiences and expectations of the present. Considering the concept of sustainable development, drawing from the most quoted definition from the Brundtland Commission (World Commission on Environment and Development [WCED], 1987), sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development emphasises intergenerational equity that is a very important ideal. But this needs to be moderated with the understanding that when we factor in the high levels of inequality in current society, large sections of the current generation legitimately may not support the simple reproduction of current society. 'Meeting the needs of today' is a complex social statement where distribution of resources is not according to needs, but according to ability to control resources. In a world divided by class, race, caste, gender and other inequalities, the continuation of current conditions for future generations is an inadequate goal. Widespread acceptance of the intergenerational equity ethic then presupposes dealing with intra-generational equity.

Third, there is a fundamental difference in the way the nature of the problem is perceived, again arising from differential experience of environmental change. In regions and sections of the population with higher levels of capitalist development and consumption, the problem is recognised as 'environmental', and there are self-conscious social movements to protect the environment. Environmentalism needs to be recognised as an important ideological trend that has a fairly long history that matures in late Anthropocene. In contrast to this, among vast sections of people in less developed regions of the world, where clearly the fallout of ecological change is more current and immediate, the problem is perceived

as a human crisis. The problem is loss of human lives and livelihoods, and what many social movements seek to protect is human life and livelihood rather than an abstract environment. The former sets out to protect the environment while the latter sets out to protect human life and livelihoods, both only occasionally recognising the interconnectedness of the two. In the later, this recognition has seen a steady growth, with an ecological narrative becoming part of social movement narratives to various extents. Social movements of the latter variety, which are often struggles over control of natural and livelihood resources, have sometimes been referred to as 'environmentalism of the poor' (Guha & Martinez-Alier, 1997). While the literature has rightly focused on the strengths of recognising the contribution of environmentalism of the poor for a more sustainable future, it is important to note that the definition of the problem and consequently the solutions proposed by these movements is not always easily adjusted with post-industrial environmental ethics and movements.

Real and False GODs

The metabolic rift is a direct indictment of the central logic of capital: grow or die (GOD). Capitalism as a system cannot survive without expanded reproduction, the endless drive to produce at greater and greater scales pushed by the necessity of increasing profits to survive competition. Profit can be the only determinant of production in capitalism, and the expansion of profit and therefore production is central to the survival of every unit within a capitalist system, which inherently drives towards a monopolistic state. Exchange value is at the heart of profit and the only value that is valuable in capitalism. The contrast is with use value, what humans need and desire, but may not make a profit from. Life and a liveable environment in themselves have no value within capitalism. This results not only in the valorisation of capital over nature, but also within environmentalism, in times of an ecological crisis, a constant effort to valorise nature through commodification. Popular constructions of the ecological crisis/climate change have three dominant characteristics: (a) 'humanity' is identified as a singular actor, (b) society is identified as the sum of its parts and (c) a popular image of capitalism—there is no alternative (TINA)—prevails.

Mainstream environmentalism or 'bourgeois environmentalism' relies centrally on the image of a singular homogenous 'humanity' that is responsible for and has contributed to the environmental crisis we face today. While the crisis we face will in the last instance remain a collective one challenging our survival as a species, the transformation of Earth by humans is closely mediated by the organisation of society and organisation of production in particular. Popular environmentalism often remains oblivious and/or unwilling to address the roots of the problem, instead highlighting the symptoms, which in themselves need concern and alleviation, but are limited since they merely offer symptomatic relief. Population growth, consumption, individual morality, modernity (science/technology) and imperfect markets are the most popularly identified problems.

The centralisation of population growth or consumption as the cause of the ecological crisis we face emerges from an understanding of humans as a singular

undifferentiated whole rather than as members of stratified society. It is ahistorical in ignoring the specific historical trajectories of colonialism and imperialism that have influenced trajectories of population growth and/or consumption in specific geographical regions and populations. The UN project that world population will increase 41 per cent by 2050, to 8.9 billion people, with nearly all of this growth in developing countries. However, the 12 per cent of the world's population that lives in North America and Western Europe accounts for 60 per cent of private consumption spending, while the one-third living in South Asia and sub-Saharan Africa accounts for only 3.2 per cent (Worldwatch, 2016). Nation states meeting frequently to deal with climate change remain embroiled in disagreements but generate and sustain a discourse that pits social justice and/or economic growth against a safe planet. Following path-breaking ideas on development as an anti-politics machine (Ferguson, 1990) and a powerful discourse (Escobar, 1995) sustaining particular power structures, it can be argued that the failure of global climate negotiations is in fact a similar discursive achievement. Their success lies in creating and sustaining a public discourse that presents a dichotomy of development versus environment. It establishes in popular imagination the idea that dealing with the impending ecological crisis is inimical to better standards of living. It frames the problem as a competition among nation states, as essentially differential interests of the rich and the poor states/nations/regions, all the while carefully avoiding the structures and processes that lead to differential interests. Capitalism remains unquestioned as a given, and failure seems to stem from individual personalities or abstract regional obstinacies.

Often as a direct critique of this process, moral values are raised as the terrain of struggle where the safety of humanity lies. Apart from its idealistic tendencies where the material basis of values is ignored, this perspective often tends to individualise the problem. The anthropocentric/ecocentric dichotomy emphasises different moral values that are significant but throw little light on the material bases of these values and therefore their social consequences.

Imperfect markets are seen as the bane of capitalism that results in the ecological crisis. It is argued that nature has been treated as an externality, with the market unable or unwilling to appropriately price the goods and services provided by nature. This lacuna of the market is seen as an aberration that can be fixed either through state intervention (regulatory policies) or through the market (green capitalism). While the term 'green capitalism' is of relatively recent vintage, the primary means of dealing with the ecological crisis in mainstream society for the longest time has been to rely on market mechanisms. Market environmentalism has been promoted since the early 1990s, and at its core, this ideology holds that the ecological crisis is because nature has not been sufficiently valued in the market. Pricing of nature's services, assignation of property rights and expansion of commodity markets into the realm of nature are capitalist solutions to the ecological crisis. Reintroducing the much critiqued tragedy of commons (see Angus, 2008; Appell, 1993, for critique of Hardin, 1968), market environmentalism focuses on privatising common natural resources and commodifying nature.

The incompatibility of ecosystem understanding and single value pricing pointed out by several scholars (Lele, Springate-Baginski, Lakerveld, Deb, &

Dash, 2013) remains ignored in this approach. The reductionist approach to the human/nature relationship is also worth noting here. Market environmentalism attempts to address the ecological crisis by commodifying nature. It promotes the pricing of natures' services, assigning of property rights and expansion of commodity markets to include nature's services. These solutions assume nature to be outside of humans and are unable to take into account the dialectical relationship of humans in nature.

Since exchange value is the only value that can be recognised in a capitalist economy, a variety of experiments have emerged that attempt to create exchange value for ecology. Payment for ecosystem services is one such flagship idea that has emerged to deal with the ecological crisis. Forests, rivers and clean air are provided with notional exchange values, and a 'market' is created for ecological goods and services. The commodity fetishism that results from this framework, that simplifies the complexity of natural ecosystems, prioritises a single exchange value, and masks social relations embedded in the process of 'producing' and 'selling' ecosystem services, has been highlighted by critics such as Kosoy and Corbera (2010).

Types of Environmentalism: Focusing on Conceptual Basis

As Moore (2015, p. 169) succinctly says, 'Conceptualizations of a problem and efforts to resolve that problem are always tightly connected. So, too, are the ways we think about the origins of a problem and how we think through possible solutions'. It is therefore useful to distinguish environmentalism on the basis of its understanding of and approach to the crisis, rather than only on the location of its participants in economic stratification. This becomes even more essential to avoid the trap of populism and essentialisation of poor as an inherently sustainable category. In practice, environmental justice movements include a wide variety of perspectives and practices. While struggles over resources are significant from the point of justice, it is also important to identify and enhance their ability to resolve the ecological crisis. From this perspective, three distinct tendencies within environmentalism can be distinguished: (a) ecocentric, (b) anthropocentric and (c) metabolic. These philosophical standpoints are tendencies within social movements and are not represented here as watertight compartments for slotting social movements. Social movements are always complex and unstable social phenomena with temporal, spatial and social variations. They may often emerge with multiple and contradictory philosophical and social locations. The classic formulation of the Narmada Bachao Andolan as an adivasi movement or the Chipko as feminist has been shown to be both limited and limiting. As Baviskar (1998) has shown in the case of the Narmada Bachao Andolan, multiple social forces with different and sometimes conflicting perspectives, objectives and practices come together at specific times to form social movements. The categories or types of environmentalism discussed further are a heuristic device to understand specific tendencies within such movements. A blurring of boundaries between these

categories at the level of empirical detail is therefore expected, and examples can only refer to certain aspects of these often complex social movements.

Ecocentrism as a philosophy emerged in the immediate aftermath of industrial capitalism responding to its monumental transformation of ecology as we knew it but also from the alienation that industrialisation engendered. It emerged as Leopold's *Land Ethic* (1968[1949]), where human exceptionalism was critiqued. It emerged as Rachel Carson's *Silent Spring* (1962) that emphasised the interdependence between human beings and nature. It is evident in Gandhi's warning that nature has enough to satisfy everyone's need but not enough to satisfy man's greed. Those who commit to an ecocentric philosophy hold and advocate that nature has intrinsic value, distinct from its instrumental value to the human species. A recent statement of commitment to ecocentrism avers, 'the ecosphere, including the life it contains, is an *inherent good*, irrespective of whether humans are the ones valuing it' (Washington, Taylor, Kopnina, Cryer, & Piccolo, 2017). Apart from claiming ethical superiority, advocates of ecocentrism also analyse the ecological crisis we face today as deriving from humanity's relentless drive towards domination of nature that results in overconsumption and overexploitation. It is the philosophical foundation of movements such as deep ecology and ecofeminism and played a central role in the development of the field of environmental ethics.

At its extreme, it not only rejects human interest, but also rejects the very value of human existence since it is detrimental to nature. Extreme conservationist positions that argue for conservation at all costs can be seen emerging from such a philosophical position. One instance from India is the justification by some environmentalists of violent displacement of people from their homes in order to create protected areas and habitats for megafauna. Many national parks, tiger reserves and sanctuaries in India have a history of direct and indirect violence against marginalised citizens, justified or ignored in the name of nature conservation (Rangarajan, 2006; Rangarajan & Sivaramakrishnan, 2012). However, ecocentric philosophy is also evident in more popular versions that critique narrow ideas of valuation of nature that can only recognise economic value. While many indigenous philosophies have often been classified as ecocentric since they may also recognise values beyond the economic or utilitarian, many are in fact metabolic in perspective rather than ecocentric. The distinction made here between the ecocentric and metabolic perspective is not the mere recognition of non-anthropocentric values, but the sharp dichotomy created between human interest and interests of 'nature'. The former accepts or condones harm to some sections of humanity as sad but unavoidable collateral damage while the later sees such harm as unacceptable because in the longer process of the metabolic cycle, there is no distinct separation of interests between human and non-human.

Anthropocentrism in its initial pre-environmental phase was seen as the source of the problem of environmental degradation. The hubris of capitalism or modernity, often undistinguished from each other, was seen as emerging from a philosophical anthropocentrism, where the only ecology that mattered was one that was of use to humans. Some of this anthropocentrism is evident in movements that argue for environmentalist action because it affects the input costs for

economic production in capitalism, or the quality of life of human beings. It is worth recognising that much of interstate negotiations at climate conferences are centred on costs and benefits to human living standards and the economy.

There are also less exceptionalist versions of anthropocentrism that focus on interdependence between human beings and nature and are not substantially different from the moderate versions of ecocentrism. In this tradition, humans emerge as significant without necessarily holding them to be inherently exceptional. Many versions of the environmentalism of the poor can be seen treading this path, where livelihood rights are seen as equal to or superseding any intrinsic rights of ecology.

The Chipko movement can be seen as an example of a movement within the anthropocentric tradition that is popularly viewed as ecocentric through discursive constructions of activists and academia. Presently, it is widely recognised that the Chipko movement in Uttarakhand where villagers, particularly women, hugged trees to protect them from felling by contractors was emergent from a long history of rights struggles of peasants (Guha, 1990); that villagers were not demanding the blanket green felling ban that was subsequently imposed by the state after the movement gained global popularity as a grassroots environmental movement; that villagers were demanding control over these forests which then rested with the state (Rangan, 2000). A struggle over who controls the right to use the forest can be seen as an anthropocentric demand in particular contexts. The fact that this demand was philosophically anthropocentric does not make it necessarily anti-ecological or any less significant for the environmental movement. However, the misrecognition of the movement as ecocentric influenced the trajectory of the movement and the outcomes, affecting both issues of justice and forest protection.

Theoretically, the metabolic perspective has a history in Marx's conception of the human/nature relationship. Foster (2000) in particular has brought back this understanding in social theory and several scholars in recent decades have developed this understanding in the context of our current recognition of the ecological crisis. For a metabolic understanding of the human/nature relationship, the basis of the ecological crisis lies in the ways that historically constituted social systems transform the relationship between natural and social systems. It begins from a focus on labour since it is through labour that humans transform the earth. However, this is never a simple unidirectional or unchanging process. The potential of human labour is realised through social organisation, and human labour produces both use value and exchange value. While human labour always transforms society, modes of organising this labour dictate what is produced, how much and for what purposes. Exchange value lies at the core of capitalism, and 'value' can be understood and measured in capitalism only as exchange value. Use value becomes irrelevant in a capitalist economy.

This core understanding of the human/nature relationship that focuses not only at the species level but also engages with nature as a historical relation is found both in Marx's ecology (ibid.) and in some indigenous understandings of a social–historical relationship between human society and natural systems. The emphasis on labour in many indigenous ideologies or world views is often

erased in their appropriation as romanticised exceptional epistemologies that appear ecocentric. This difference can be understood by drawing from feminist debates that have emphasised the significance of situated knowledge (Haraway, 1991) as a counter to essentialised ecofeminism (Mies & Shiva, 2010; Shiva, 1989). Perceptions of the environment are implicated in practices of labour, not only at the individual level but also at the level of social organisation.

Savyasaachi's (1994) study among the Hill Kharias in Simlipal provides one such example. He writes, 'The forest dwellers recognize a life-force which flows through the forest, through its food chains and life-cycles, from which all the elements of the forest, including man, draw nourishment' (ibid., p. 476). Unlike the centralised management of Simlipal as a tiger reserve, which seeks unsuccessfully to create discrete geographies that separate metabolic flows (ecocentric as described earlier), Kharia perceive the interconnections inherent in the ecosystem and see the forest as a work place. Similar to Liebig's description of the impact of capitalist agriculture on soil fertility, in Simlipal, circumstances created by Project Tiger interfere with the life cycle of plants, disrupt the food chain and prepare the ground for deforestation (ibid.). Savyasaachi describes how the detritus food chain, which orders the process of self-regeneration, is disturbed. The collection of sal seeds reduces the food material for herbivores and saprophytes, which in turn leads to the decline of population of rodents, squirrels, porcupine, hare and rabbits. This in turn affects the population of reptiles. The collection of sal leaves affects the thickness of the humus layer on the forest floor, which in turn affects growth of mushrooms and toadstool. With a decrease in mushrooms, people in Simlipal look for wild animals for their protein nutrition, which results in their decline. This case study presents one example of an indigenous metabolic perspective.

Conclusion: Addressing the Metabolic Rift

Classification is always about power, and it conceals as much as it reveals. And the classification of environmentalism is equally implicated in this project of classification. The environmentalism of the poor was a particularly powerful project of classification that drew attention to inequality as a central concern and provided the framework for the environmental justice movement. At its radical best (Martinez-Alier, 2005), it draws attention to an imperial history that is implicated in our current ecological crisis. It establishes the link between justice and sustainability. However, as with many radical concepts, its mainstreaming also results in its declawing. While movements that retain their radical edge continue to struggle for environmental justice, the widespread use of the concept also conceals and underplays the implication of capitalism in the ecological crisis.

The definition of ecological problems significantly prefigures their solution. In understanding the Anthropocene, in responding to climate change, in the ability of social movements to respond to the ecological crisis, how we understand the problem we want to address is significant. This article locates our current ecological crisis as a metabolic rift inherent in the logic of capital. This

understanding is important not only as a critique of historical capitalism, but in our collective efforts to address this fundamental rift.

Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The author received no financial support for the research, authorship and/or publication of this article.

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