

Marxism in the Anthropocene: Dialectical Rifts on the Left

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ABSTRACT

Natural scientists have pointed to the Anthropocene as a new geological epoch, with the precise dating not yet decided, but often traced to the Great Acceleration of the human impact on the environment since 1945. Thus understood, the Anthropocene largely coincides with the rise of the modern environmental movement and corresponds to the age of planetary crisis. This paper looks at the evolution of Marxian and left contributions to environmental thought during this period. Although Marx's ecological materialism is now widely recognized, with the rediscovery of his theory of metabolic rift, the debate has recently shifted to ecological dialectics, including dualism, monism, totality, and mediation, generating a conflict between ecological Marxism and radical ecological monism. It is argued here that only an ecological Marxism, rooted in a materialist *dialectic of nature and society*, is able to engage effectively with the Great Climacteric that increasingly governs our times.

KEYWORDS

Anthropocene; Marx; dialectics; nature; ecology

1. Introduction

The designation of the Anthropocene as a new geological epoch by natural scientists—although not yet officially adopted within the scientific community—can be seen as a “second Copernican Revolution,” fundamentally altering the way in which human beings perceive their relation to the earth (Schellnhuber 1999, 19–23).¹ In many ways the core idea behind the notion of the Anthropocene—the view that human beings have become a major geological force disrupting the Earth system—has been around for a long time. It is an idea, moreover, in which socialist thinkers have played a critical role from the start. Marx and Engels declared in the 1840s that there were no parts of the globe, except perhaps in the case of a few recently arisen coral islands, which were untouched by human beings (Marx and Engels 1975a, vol. 5, 40). The word “Anthropocene” itself, and the notion of a new Anthropocene (or Anthropogene) epoch, were first introduced in the 1920s (and into English in the early 1970s, in a translation from the Russian) in the analysis of the Soviet geologist Aleksei Pavlov (Shantser 1973, 140).² Working in line with Soviet geochemist Vladimir I. Vernadsky, who wrote his great work *The Biosphere* (1998) in this

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¹ Schellnhuber was referring to Earth system analysis, rather than the Anthropocene. Yet, the two today are inextricably related, and the phrase is therefore equally applicable to the concept of the Anthropocene.

² It was in Shantser's (1973) *The Great Soviet Encyclopedia* article that Pavlov's concept of the Anthropocene first appeared in English.

same period, Pavlov insisted that humanity in the twentieth century was more and more becoming a geological force altering the entire biosphere (Vernadsky 2014).

In the early 1970s, US socialist ecologist Barry Commoner came to a related conclusion, but one tailored to his own age. In his book *The Closing Circle*, Commoner (1971, 39–41, 45–46; Foster 1994, 108–24) insisted that a fundamental break in the human relation to the planet through production had occurred in the Second World War period with the rise of atomic energy and the expansion of synthetic chemicals, leading in the direction of the accelerated degradation of ecological conditions. In 1970, Vernadsky's concept of the biosphere, long neglected in the West, was the subject of a special issue of *Scientific American* (Hutchinson 1970).

The Anthropocene, as Clive Hamilton and Jacques Grinevald observe, “is a new anthropogenic rift in the natural history of planet earth rather than the further development of the anthropocentric biosphere” (Hamilton and Grinevald 2015, 67). It represents the transformation of quantitative change in production over the course of human history into a qualitative leap, a global “rift” (Hamilton and Grinevald 2015, 67). This is dramatized by the now famous charts of natural-physical and social change depicting the Great Acceleration since 1945 (or 1950), whereby all major measurements of biological and social change are shown to follow a hockey-stick pattern, including the well-known increase in carbon dioxide emissions (Angus 2015; Steffen et al. 2015). Hence, the geological “golden spike” depicting the Anthropocene is now increasingly identified with the Great Acceleration in the human disruption of the planet in the post-1945 period, the most definitive stratigraphic traces of which are to be found in fallout radionuclides from nuclear weapons testing (Waters et al. 2016).³

It is no accident that the Great Acceleration after the Second World War, leading to what scientists are now commonly calling the Anthropocene epoch, was paralleled by the development of the global environmental movement in the same period. The environmental struggle from the 1950s on commenced with the protests led by scientists over atmospheric nuclear testing, and then extended into such areas as pesticides and more general ecological concerns, with the publication, in particular, of Rachel Carson's *Silent Spring* (1962). In the more than half a century that has followed, the environmental movement has increasingly focused on what is seen as the planetary emergency as global ecological contradictions have worsened.

The world today is thus in the midst of a Great Climacteric (Burton and Kates 1986; Foster 2015a)—a transition period of immense consequence—represented by the advent of the Anthropocene, coupled with the emergence of what could be called the Age of Ecological Enlightenment. The question now is: How are Marxian thinkers, and the left more generally, responding to the advent of the Anthropocene (i.e. the reality of a new anthropogenic rift in the Earth system), and how is this challenge related to changing historical conditions arising from human production? Indeed, what intellectual resources does Marxism have to offer with which to address these new conditions and new perils?

There is no easy answer to this question. Rather, Marxian thought in this area, while developing rapidly and moving towards a higher synthesis, is still in many ways in a state of bifurcation brought on by long-standing divisions within socialist theory, largely

³ For a long-term perspective on the notion of a geological “golden spike” separating each major period of Earth geohistory, see Rudwick (2005, 21–22).

attributable to the Cold War, and by the rise more recently of new left perspectives, associated with social constructionism and postmodernism. This article will show that although the relation between Marx's political economy and his ecology is now largely clarified as a result of the debates of the last decade and a half, and while Marx's own extraordinary *ecological critique* is now widely recognized, the debate has now shifted to the *dialectics of nature and society* itself. This has led to a widening gulf in ecological left analyses between those committed to the dialectics of nature and society and those committed to a radical social-monist outlook—which, however, is unable to engage fully with totality.

2. Marxian ecological thought in the Anthropocene (1945–)

If we look over the history of Marxian analyses of ecology in the English-speaking world in particular since the Second World War, we see a number of key developments and controversies, centering on the status of Marx's own ecology, dividing first-stage and second-stage ecosocialist analysis. Moreover, today the decades-long controversy between first-stage and second-stage ecosocialism is being superseded by a more far-reaching debate on the dialectics of ecology and the relation of this to revolutionary praxis.

2.1. The 1950s to late 1970s: socialism and ecology

The rise everywhere of ecological thinking in what we now understand as the advent of the Anthropocene epoch, particularly in the period after the Second World War, led to a prefigurative Marxian environmental perspective in the 1960s and 1970s, reflected in the work of figures like K. William Kapp (1950), Commoner (1971), Virginia Brodine (1971, 2007), Herbert Marcuse (1972), Paul Sweezy (1973), Howard Parsons (1977), Charles Anderson (1976), and Allan Schnaiberg (1980). Here socialism and the radical environmental movement were seen as organically connected, resulting in major environmental contributions on the left.

2.2. The late 1970s to late 1990s: ecosocialism

The negative dialectic of the domination of nature, associated with Max Horkheimer and Theodor Adorno, began slowly to infiltrate into the English-speaking world in the 1970s due to the translation of Alfred Schmidt's (1971) *The Concept of Nature in Marx*, originally published in Germany in 1962. Characteristic of developments in this sphere in the late 1970s, 1980s and 1990s was the so-called "Western Marxist" rejection of the dialectics of nature (which came to be associated with Engels rather than Marx) and hence a distancing from not only Soviet-style Marxism but also all connections between Marxism and natural science. In Schmidt's interpretation, following Horkheimer and Adorno, the Enlightenment domination of nature, to which Marx himself was said to have fallen prey, pointed to a Weberian-like iron cage from which there was no escape.⁴ Presenting what he presumed to be Marx's mature perspective, Schmidt (1971, 156) declared:

We should . . . ask, whether the future society will not be a mammoth machine, whether the prophecy of the *Dialektik der Aufklärung* [Horkheimer and Adorno's *Dialectic of*

⁴ On Weber's environmental views and their relation to the Frankfurt School, see Foster and Holleman (2012).

Enlightenment], that “human society will be a massive racket in nature,” will not be fulfilled rather than the young Marx’s dream of a humanization of nature, which would at the same time include the naturalization of man.

Adorno himself was to opine that Marx “underwrote something as arch-bourgeois as the program of an absolute control of nature” (Adorno 1973, 244).

The criticism of Marx on nature coupled with rejection of the dialectics of nature gave rise to two disparate traditions in the 1980s and 1990s. The first of these was the growth of what has been referred to as “first-stage ecosocialist thought” (see Foster and Burkett 2016, 2–3) in the writings of figures like Andre Gorz (1994), Ted Benton (1989), Robyn Eckersley (1992), James O’Connor (1998), Donald Worster (1994), Joel Kovel (2002), Daniel Bensaïd (2002), and Daniel Tanuro (2013). This was characterized by a negative assessment of Marx on ecology, and an attempt to link with more mainstream Green-Malthusian conceptions.

The second influential tradition to emerge in this period was the “production of nature” perspective of radical geography, associated in particular with thinkers like Neil Smith (2008) and Noel Castree (2001), which was to be largely disassociated from the fierce debates emerging over ecosocialism. Here Schmidt’s negative critique of the “domination of nature” was replaced by the more positive view of the “production of nature.” The result was a left social constructionism and social monism, merged with political-economic perspectives, in which nature was seen as subsumed within society. Due to its hyper-social constructionism, the production of nature perspective increasingly came to overlap with a postmodernist approach more distant from classical Marxism—notably the work of Bruno Latour (1993, 2005), with its emphasis on the “hybridity” of society and nature.

2.3. The late 1990s to 2016: ecological Marxism, monism, and dialectics

The opening decade and a half of the twenty-first century saw a break from first-stage ecosocialism, with an attempt to reconstruct Marx’s ecology, in what came to be known as “second-stage ecosocialism” (Foster 2014, viii–x). In this wave, Paul Burkett (2014) and John Bellamy Foster (2000), but also figures such as Elmar Altvater (1993), Brett Clark (Foster, Clark, and York 2010), Peter Dickens (2004), Andreas Malm (2013, 2016), and Richard York (Foster, Clark, and York 2010), sought to go back to the foundations of Marx and Engels’s own ecological conceptions in their classical critique of political economy. The most dramatic discoveries of this period were the uncovering of Marx’s ecological value analysis and his theory of metabolic rift. Recently we have seen related developments in Marxist ecofeminism in the work of Ariel Salleh (2009) and Pamela Odih (2014). This new approach, based on Marxism’s classical foundations, was couched largely in opposition to first-stage ecosocialists, and thus emerged as a second-stage ecosocialism or ecological Marxism. This gave rise eventually to a third-stage ecosocialism (e.g. Weston 2014; Longo, Clausen, and Clark 2015; Angus 2016), which increasingly took this new theoretical perspective into the realm of ecosocialist praxis through the investigation of the developing ecological rift in the Earth system. This contributed to the emergence of a more revolutionary ecological movement, exemplified by the ecosocialist organization System Change Not Climate Change in the United States.

Today the discoveries of second-stage ecosocialists, who created a kind of “modern synthesis”—connecting classical Marxism dialectically with the modern ecological critique emanating in large part from ecological science—are widely accepted.⁵ The rediscovery of the ecological value-form character of Marx’s political economy, his conception of metabolic rift, and his recognition of unequal ecological exchange (and ecological imperialism) have all shifted the ecological debate globally in more revolutionary directions. Few involved in ecosocialist discussions today doubt the importance of Marx’s foundational contributions to the ecological critique of capitalism.⁶

Yet, the general convergence of views within ecosocialism on Marx’s ecology, particularly around Marx’s theory of metabolic rift, has only served to bring to the fore the conflict with the various forms of hyper-social-constructionist monism now developing in Marxian, post-Marxian and postmodernist circles (e.g. Smith 2008; Castree 2015a; Bensaid 2002; Moore 2015a; White, Rudy, and Gareau 2015). Such analyses emphasize the growing *unity* in ecological relations as nature is subsumed within capitalist society. They are thus at odds with the viewpoint of most radical environmentalists and ecosocialists. The production of nature perspective, which has gained influence during the past three decades, primarily within radical geography, represents a kind of parallel current, largely independent of the fierce debates that have taken place within environmentalism and ecosocialism.⁷ It contends that almost all other left approaches to environmental nature-society questions (including that of Marx himself) are characterized by Cartesian dualism.⁸

Related to this are the radical social constructionist theorists of hybridity (sometimes referred to as “relational” theorists), who see a world populated by networks of machines, artifacts, cyborgs, etc. or as Latour says “monsters.” These thinkers have likewise insisted that Marxism is fatally flawed—with Marx himself accused of having fallen prey, despite his dialectical perspective, to the nature-society dualism. In this view, Marx failed to perceive the emergence of a hybrid world, as depicted in Latour’s actor-network-theory (ANT). As Latour said in a talk for the ecological-modernist Breakthrough Institute

⁵ The reference to a “modern synthesis” is meant to refer back to the synthesis of Darwinism with Mendelian genetics that occurred in the 1930s, in which geneticists like Julian Huxley and J. B. S. Haldane reached back to Darwin’s original doctrines and demonstrated that the new knowledge did not displace the theory of natural selection, but gave it a new complexity and importance, bringing out more fully the significance of Darwin’s classical theory for the present. An analogous process is occurring with respect to Marx and ecology today.

⁶ None of the previous forms of left ecological thought have entirely gone away. The Frankfurt School’s negative dialectic of the domination of nature—in which Horkheimer opined that “men cannot utilize their power over nature for the rational organization of the earth but rather must yield themselves to blind individual and national egoism under the compulsion of circumstances and of inescapable manipulation”—naturally persists in some quarters on the left, leading to a grim negativity (quoted in Leiss 1974, 154). Criticizing this view in his 2004 book *Society and Nature: Changing Our Environment, Changing Ourselves*, Dickens (2004, 10; also Jay 1985, 14–61) characterized Horkheimer and Adorno’s “fearsome anti-Enlightenment critique” as sheer “pessimism.” This fearsome critique had a negative effect on the interpretation of Marx that still persists in some quarters. Thus first-stage ecosocialism—which draws much of its motivation from the attempt to disgorge itself of a strong relation to Marxism—has gained a second life in recent years in its repeated attempts to demonstrate a “fundamental flaw” in Marx’s ecology (e.g. Tanuro 2013, 136–43). For a critique of this tendency see Foster and Burkett (2016, 15–50).

⁷ It is noteworthy that Smith, who continued to write on the production of nature up to 2008, ignored works such as Burkett 2014 (originally published in 1999), Foster (2000), and Burkett (2006), while Castree (2000) mentions Burkett only slightly. The implicit assumption is that Schmidt’s (1971) interpretation of Marx on nature, which has been largely abandoned elsewhere, remains valid.

⁸ The struggle over Cartesian dualism is a long-standing one in philosophy. See Lovejoy (1930). It is only recently that this has been directed against Marx and Marxism. Marx’s philosophical outlook, embodying a dialectical critical realism/materialism, is hardly a likely target for those seeking to attack dogmatically dualist views. On Marx’s epistemology and its relation to critical realism see Bhaskar (1983).

(where he is a senior fellow), the object today should be to “Love Your Monsters” (2012). In this view, “imbroglios” or technological monsters, modern versions of Mary Shelley’s *Frankenstein*, are a normal part of our relation to nature, and we should accept them and their consequences, while rejecting environmentalism in favor of “political ecology” that consciously internalizes or bundles nature (Latour 2004, 246). Latour thus demonstrates an affinity for Nordhaus and Shellenberger’s whole notion of a “breakthrough,” i.e. a “post-environmentalism,” which does not challenge capital accumulation and unlimited economic growth, or accept the existence of natural limits, but rather places its emphasis on machines/technology, coupled with the market mechanism, as the complete solution (Nordhaus and Shellenberger 2012).⁹

Hence, the Western left’s growing interface with monism/hybridism has resulted in the emergence of an epistemic rift between ecological Marxism and radical social monism. Latourian Marxists (e.g. Bensaïd 2002; Moore 2015a; White, Rudy, and Gareau 2015) have increasingly engaged in a critique of those numerous ecological Marxists who today root their analysis in Marx’s metabolism theory.

3. Ecological Marxism versus radical ecological monism

It has become common for the postmodernist-left, and even for some Marxian theorists connected to the production of nature/social constructionist/hybridist traditions, to claim that environmentalists, including ecosocialists, are purveyors of a crude catastrophism or, in Neil Smith’s (2008, 247) words, “left apocalypticism”—insofar as they subscribe to the notion that nature or the Earth system is something that can be degraded.

To understand the deep theoretical differences that manifest themselves here it is necessary to recognize the degree to which the philosophical tradition commonly known as “Western Marxism” estranged itself, via its rejection of the dialectics of nature, not only from nature and natural science, but also from the Marxian concept of the alienation of nature (see Jacoby 1983; Jay 1984, 115–17; Jameson 2009, 6). The result is an approach to dialectics within Western Marxism that is largely idealist in character, and thus closed—restricted to notions of subject-object identity and all-embracing internal relations, while excluding all natural processes.¹⁰

Environmental analysis influenced by the tradition of “Western Marxism” thus exhibits a tendency to forsake materialist dialectics and critical realism for a kind of anthropocentric monism. If Cartesian dualism is to be rejected, in this view, the only alternative

⁹ The tendency to deny natural-physical and environmental processes in social analysis, and their theoretical absorption within the social, was decried by Dunlap and Martin (1983, 204) more than three decades ago as the rise of a “new brand of determinism—socio-cultural determinism.”

¹⁰ Bertell Ollman’s influential work (1976, 1993), interpreting Marx’s dialectics in terms of “the philosophy of internal relations,” accounts, in part, for this *exclusive* emphasis on internal relations. Drawing on the metaphysical and idealist traditions of Leibniz, in particular, as well as Spinoza, Hegel, and Whitehead, together with the early Marxist Joseph Dietzgen (1906, 1908), Ollman (1993, 35) writes that,

In the history of ideas, the view that we have been developing is known as the philosophy of internal relations. Marx’s immediate philosophical influences in this regard were Leibniz, Spinoza, and Hegel. . . . What all had in common is the belief that the relations that come together to make up the whole get expressed in what are taken to be its parts. Each part is viewed as incorporating in what it is all its relations with other parts up to and including everything that comes into the whole.

This view has been questioned on essentially critical-realist grounds as inconsistent with a more open-ended materialist perspective by such Marxian theorists as Rader (1979, 56–85) and Bhaskar (1993, 201).

is to adopt an outlook more closely related to Leibniz—with his emphasis on pre-established harmony (famously parodied by Voltaire in *Candide* [1960])—than to Spinoza, and more closely related to Spinoza than to Marx (or even Hegel). What is most often missing in this turn to social monism is the understanding of complex mediations between nature and society within a dialectical concept of totality (e.g. Lukács 1980; Mészáros 1972). The result is to exclude the possibility of a society of sustainable human development in line with Marx's conception of socialism (Burkett 2005).

The radical severance from the historical-dialectical concept of nature evident in the new postmodernist-influenced left perspectives can be quite severe. For a Hegelian-Lacanian-Marxian philosopher such as Slavoj Žižek, even the growing recognition of the ecological problem does not entitle Marxian thinkers to resurrect Engels's dialectics of nature. Instead, dialectical materialism/naturalism is said to be an inherently anti-ecological philosophy. Referring to the frequent contention of Marxian ecologists that materialist dialectics, "since it locates human history in the general frame of an all-encompassing 'dialectics of nature' . . . is much more appropriate for grasping the ecological problematic," Žižek (2013, 262) rhetorically queries: "But is this really so? Is it not, on the contrary, that the dialectical-materialist vision with its 'objective laws of nature' justifies a ruthless technological domination over and exploitation of nature?"

Here the materialist dialectic (and materialist science more broadly) becomes the enemy. Not only the dialectics of nature, but any meaningful materialist conception of nature, is denied. In accord with Schmidt, Žižek (2013, 261) pronounces: "We should therefore reject the young Marx's celebration of the subject's productive powers or potentials, of its essential nature," and his equation of naturalism and humanism, including the roots of this in ancient Greek thought. The reason Žižek (2013, 373) gives for this rejection is that "humanity is anti-nature." Ecology, under capitalism, has become "a New Opium of the Masses" (2007; emphasis in original).¹¹ Hence, "the ideological aspect of ecology should . . . be denounced" along with the idea of the potential development of a sustainable relation to nature. Questioning the notion that "architecture should be in harmony with its natural environment," Žižek insists that "architecture is by definition anti-nature, an act of delimitation against nature." Humanity, to be sure, is a "part of nature," but "there is no nature," he suggests, apart from humanity and human knowledge (2013, 373).¹²

Indeed, for many social constructionists, radical postmodernists, and left idealists, the problem of nature is essentially eliminated through its subordination to society. Neil Smith introduced his argument on the production of nature in his *Uneven Development* by saying that "there can be no apology for the anthropomorphism of this perspective" (2008, 8). Likewise critical theorist and radical social constructionist Steven Vogel, in his *Against Nature*, criticizes Georg Lukács and Herbert Marcuse for their alleged dualist views with respect to society and nature and insists on the need of critical theory to adopt "something like anthropocentrism" (1996, 160).¹³

¹¹ This same phrase of ecology as "the new opium of the masses" is used in a positive way as well in Badiou (2008) and Swyngedouw (2010, 304).

¹² Despite his frequent anti-ecological and even anti-nature statements, Žižek, who is hardly known for his consistency, is capable in certain contexts of rational discussion of the ecological crisis and its relation to capitalism (Žižek 2010, 327–36).

¹³ Vogel's strong anthropocentrism is even more clearly evident in the title to his most recent work, *Thinking like a Mall: Environmental Philosophy after the End of Nature* (Vogel 2015).

Such views lead to an abstract anthropomorphic holism/social monism. Nature is seen as becoming progressively anthropogenic in a unifying way, without alienation and without rifts. There is no need for a *dialectics of nature and society*, or even for natural science in the usual sense, since natural processes are now to be treated as internal to the social dialectic. Anything that smacks of contradictions between capitalism and nature, we are told, can be dispatched as a form of dualism, one that can be ultimately traced within Marxism to Marx himself (Smith 2008, 31).

All of this has generated a widening gulf between ecological Marxism and left ecological monism. The last decade and a half, as noted, has seen the reemergence of Marx's classical ecological perspective, reaffirming its role in the critique of political economy. The debate between first-stage ecosocialism and second-stage ecosocialism, insofar as this relates to Marx's own analysis, has largely been settled, in favor of the latter, building on Marx's foundational view. Socialist thinkers have taken this forward to develop a powerful critique of the rift in planetary boundaries characterizing the Anthropocene. This new critical perspective has then been connected to on-the-ground movements. Not only has the ecological nature of Marx's value theory been uncovered, but so has his concept of ecological crisis proper, the metabolic rift—along with his notions of social metabolism and the universal metabolism of nature (Marx and Engels 1975a, vol. 30, 54–66; Marx 1981, 949).¹⁴ Marx's understanding of how capitalism robbed the soil, on an international, not just a national basis, has been developed into an analysis of unequal ecological exchange (Foster and Holleman 2014; Clark and Foster 2012). The excursions of Engels into the dialectics of nature, it is now recognized, led to a critique of capitalism's unsustainable relation to nature (also to be found in Marx's analyses in the *Grundrisse* [1973] and *Capital* [1976, 1981]). Engels's development of what is now known as gene-culture coevolution, it was discovered, prefigured the main twentieth century discoveries in human evolution (Gould 1987, 111; Foster 2000, 196–207). More recent work has emphasized Marx and Engels's explorations of thermodynamics, and Marx's sensuous aesthetics, showing the full range of their ecological thought (Foster and Burkett 2016). For Marx, a major ecological contradiction such as anthropogenic desertification, arising from historical class society and continuing under capitalism, could be seen as “an unconscious socialist tendency,” demanding the revolutionary restoration of essential natural conditions (Marx and Engels 1975a, vol. 42, 558–59).¹⁵

Not only Marx and Engels, but, as we are now beginning to understand, a long list of socialist thinkers, contributed to ecology in the period between Marx's death and the rise of the Anthropocene. This included, in Britain alone (where the Marx-Darwin connection was strongest), figures like E. Ray Lankester, William Morris, H. G. Wells, J. B. S. Haldane,

¹⁴ Marx's concept of the “universal metabolism of nature” clearly refutes Salvatore Engel-Di Mauro's (2014, 141) objection to Marx's use of metabolism on the grounds that it “excludes the importance of material exchanges not involving people.”

¹⁵ In addressing Carl Fraas's discussion of desertification in pre-capitalist class society, Marx made it clear that he saw this as a problem that only worsened globally under historical capitalism—a view based on his theory of metabolic rift (see Saito 2016, 34–39). The only real answer to such contradictions was a society of associated producers that rationally regulated the social metabolism between human beings and nature. He therefore characterized this growing ecological contradiction of civilization as an “unconscious socialist tendency.” The significance of Marx's statement here was to be emphasized in late Soviet ecology. Thus the geophysicist and climatologist (a member of the Presidium of the Supreme Soviet) E. K. Fedorov (1972, 146–47) used Marx's argument here to explain why today's environmental scientists and activists “display (possibly unconsciously) certain ‘socialist tendencies.’”

J. D. Bernal, Lancelot Hogben, Hyman Levy, Joseph Needham, Arthur Tansley, and Christopher Caudwell (see Foster 1998; 2000, 226–49; Foster, Clark, and York 2010, 324–40).

However, this new dialectical understanding of socialist ecology, in which dialectics is central to the understanding of the mediation of nature and society through production (in its broadest sense), has recently come into conflict with an emphasis in left social constructionist circles on the development of a social monism subsuming nature within society/capitalism. Such a “radical monism” (Bensäid 2002, 314–15) or “monist and relational” (Moore 2015a, 85–86) outlook is seen either as characteristic of Marx himself, or as a way out of Marx’s own supposed dualism. Failing to see history, in its totality, in the Marxian view, as a process of dialectical mediation and change in the metabolism of nature and society, such analyses all too often promote idealist notions of holism, monism, and harmony, arising from capitalism’s interaction with nature—or else a hybridity, where humanity and society are seen as intermeshed or bundled together in ever new ways.

By these means the alienated antagonism of capitalism towards the natural world and natural processes surrounding it (and of which it is a part) is conjured away. Marx’s conception of the rift in the metabolism of nature and society is itself classified as a dualistic view. It is as if material existence were no longer the issue, and the questions of the Anthropocene, the Great Acceleration, and the Great Climacteric (Burton and Kates 1986; Foster 2015a) did not comprise the fundamental challenges of the twenty-first century.

This radical social monism subsumes the environment within society—in effect abandoning the dialectic of nature and society by reducing the former to the latter. The anthropocentrism characteristic of such perspectives often goes hand in hand with a form of economic reductionism, in which *ecological* crises are seen as existing only insofar as they represent *economic crises for capital* (e.g. Moore 2014, 2015a, 2015b). In fact, in the new, fashionable postmodernist left perspectives, all of the characteristic forms of bourgeois thought reappear—even as they purport to transcend Marx.

As István Mészáros explained in *The Social Determination of Method* (2010)—the first volume of his magisterial *Social Structures and Forms of Consciousness*—bourgeois thought historically has formalistically counterposed dualism against idealized notions of unity, universality, and harmony as a fundamental antinomy—moving perpetually from one perspective to the other, with each contributing to the reproduction of an alienating ideology. “The interminable succession of philosophical dualisms and dichotomies in the writings conceived from the point of view of capital’s political economy,” Mészáros (186) observes, “. . . remains thoroughly unintelligible without the manifold practical dualisms and antinomies of the socioeconomic order which the dualistic methodologies of this tradition both express and help to sustain.” Nor is it a simple matter of substituting an abstract monism or holism for these dualistic conceptions, since they are embedded in the structure of the dominant order itself. Thus,

just as the dualisms and dichotomies of the post-Cartesian philosophical tradition arise from the soil of a determinate social practice, by the same token it is impossible to think of theoretically resolving them simply through the adoption of a new categorical framework, without envisaging at the same time an alternative social order from which the *practical* antinomies of capital’s historically specific system can be removed. (189)

In the end, the answer to dualism is not an abstract monism, constituting dualism's dialectical twin, but rather a conception of revolutionary praxis extending to the metabolism of nature and society.

Naturally, even Marxist theorists have trouble overcoming these antinomies. Hence Jean-Paul Sartre (2004, 25; emphasis in original) made the extraordinary claim that Marxism "*is dualist because it is monist.*"¹⁶ The irreducibility of material being to thought, and the recognition that thought was a product of particular forms of material practice, were in Sartre's interpretation of Marxism, invitations to a new ontological monism which gave rise, in turn, to a new epistemological dualism: a dualism no longer between thought and being, but rather between being and truth (26). All of this was, however, the product of Sartre's own search for the closure of the subject-object dialectic, and a product of his vehement rejection of the dialectics of nature. The result was a perpetual antinomy of dualism and monism, which proved inescapable in his terms. "The dialectic," he wrote, "is precisely a form of monism. . . . Nature is the monism of materiality" (180–81).

But Sartre, who was far from ecological in his perspective, deplored what he called "the violence of matter," and declared that "any philosophy that subordinates the human to what is Other than man [reducing the world "to mere energy equations"] . . . has hatred of man as both its basis and its consequence" (2004, 181–82). In this sense, Sartre's existential monism was associated with the annihilation of nature's exteriority (or, as Bhaskar [1993, 394] would say, *alterity*), and of any ground of materiality that was not human. "He," the human being, Sartre wrote in his essay "Materialism and Revolution," "is completely in Nature's clutches, and at any moment Nature can crush him and annihilate him, body and soul" (Sartre 1955, 236).¹⁷

Unable to reconcile necessity and freedom in these terms, or to accept an open-ended, materialist dialectic, Sartre opted—in a perpetual wheel of contradiction—for dualism as a necessary moment of monism. What he sought to transcend, by embracing both ends of the opposition, although in the name of a higher existential monism, was the abstracted, metaphysical reality of both dualism and monism. Monism (like dualism), taken by itself, is undialectical—a problem that Sartre tried unsuccessfully to overcome through his own "dialectical monism" (Sartre 2004, 15). Yet, the only authentic answer to this from a historical materialist perspective, as Marx himself indicated, is the cessation of any resting point and with it any final closure: the recognition of the unending materialist dialectic of nature and society. For Marx "the only immutable thing is the abstraction of movement: *mors immortalis*" (immortal death—Lucretius) (Marx and Engels 1975a, vol. 1, 474; Foster 2000, 131–32; emphasis in original).

3.1. Social monism as world-ecology: Bensaïd and Moore

The crude monism being offered today on the left as an alternative to dualism has none of Sartre's dialectical sophistication or deep revolutionary commitment, and is based rather on the mechanical assertion of monism as the answer to dualism, coupled with notions of

¹⁶ In Fredric Jameson's (2004, xxii) interpretation of Sartre's position, Sartre was arguing for a "dualism which functions as a moment in the reestablishment of monism proper."

¹⁷ Sartre (2004, 161–65) did introduce an intriguing environmental discussion at one point in his treatment of "counter-finality," or "matter as inverted practice," where he employed the example of peasant deforestation in China, leading to the counter-finality of floods, engendering an organized, collective response on the part of society.

hybridity and “bundling.” Here Marxism is turned into a simple inverse of Sidney Hook’s Cold War polemic against dialectical materialism/naturalism. Hook claimed that Marxism had been transformed into a crude “monistic theory” (Hook 1982, 37), by which he meant the positivistic subordination of society to nature. Today, however, this has been inverted—with left theorists, influenced by postmodernism, increasingly arguing that Marx adopted a *social monist* philosophy in his rejection of the dualist Enlightenment world view, subsuming nature within society.¹⁸

This is the stance taken by the French Marxist philosopher (and first-stage ecosocialist) Daniel Bensaïd in his *Marx for Our Times* (2002, 314), where it is claimed that Marx put forward “the principle of a radical monism” in his *Economic and Philosophic Manuscripts*, and that “the classical philosophical antinomies (between materialism and idealism, nature and history) are resolved in this radical monism.” For Bensaïd, Marx was not a materialist any more than an idealist; he was rather committed to a philosophical monism as his way of transcending both. Here we are told that in Marx’s famous argument in the *Economic and Philosophic Manuscripts* on the merging of naturalism and humanism, he was not only rejecting Cartesian dualism, but offering radical monism in response.

With respect to Marx’s concept of nature, Bensaïd (2002, 320–21) recognizes, with Schmidt, that “for Marx, nature is irreducible to a social category.” But he gets around this by arguing that Marx’s monism was one of “a general process of hybridization,” resulting in the creation of “‘Hybrid objects’ (simultaneously natural and social).” Hence, Marx is seen as a precursor to Latour. Playing on Latour’s famous title, *We Have Never Been Modern*, Bensaïd says of Marx, “He, too, was never modern” (320–21).

Rather than seeing Marx’s critique of dualism as both materialist and dialectical, and aimed at a mediated totality, thereby linked to revolutionary praxis, Bensaïd simply substitutes monism for dualism. Moreover, the monism here is one of postmodernist hybridization. Nature no longer exists except as a collection of socially generated hybrids. If Bensaïd remains a radical thinker, it is in a left postmodernist context in which all dialectical approaches to the human relation to nature are abandoned, in favor of an eclectic hybridism. Engels, meanwhile, is criticized by Bensaïd (2002, 327–41) for allegedly rejecting the second law of thermodynamics (though in truth [see Foster and Burkett 2016, 165–203] Engels simply questioned the dubious corollary of the heat death of the universe). For Bensaïd, all of this is emblematic of the failure of Engels’s dialectics of nature, which stood opposed to Marx’s alleged radical monism.

World-ecology theorist Jason W. Moore (2014, 16; 2015a, 85) argues similarly for what he calls a “monist and relational view,” in opposition to the dualism of nature and society—confusing such monism with a dialectical perspective. Moore (2014; 2015a, 79, 86) bases much of his analysis on what he calls a “singular metabolism.”¹⁹ In this way, he departs from Marx’s own complex, dialectical understanding of “the universal metabolism of nature,” conceived as the totality, of which the social metabolism is a dialectically (and

¹⁸ Monism of any variety raises serious philosophical objections. See, for example, James (1955, 89–108), Joad (1936, 428–31), and Bhaskar (1993, 354–65).

¹⁹ Moore (2014, 11) begins with the sentence: “Metabolism is a seductive metaphor.” It is in these terms that he then constructs his notion of a “singular metabolism”—itself defined in terms of the metaphor of “the web of life” (Moore 2014, 12). This essentially idealist approach contrasts with Marx’s materialist dialectic, in which metabolism was seen not as a mere metaphor but as reflecting a natural-physical process, related to material reproduction. Moore’s approach with its idealist emphasis, thus departs sharply from Marx’s materialism with its deep links to physical science.

historically) mediated part (Marx and Engels 1975a, vol. 30, 63).²⁰ In contrast, Moore opts for a “singular metabolism,” conceived on a monist basis, or a “metabolism liberated from dualisms”—one characterized by a “nature-in-humanity” that is simultaneously a “humanity-in-nature,” constituting a “double internality” (Moore 2014, 12, 15; 2015a, 15, 78–82). The object here is to dissolve the real nature-society antagonism of the capitalist alienation of nature, by postulating the subsumption of all natural processes within an “abstract social nature” or—what amounts to the same thing—their bundling together under the impetus of human-historical processes (Moore 2014, 11, 13; 2015a, 46, 206).

In order to escape any tinge of dualism—or the irreducibility of both nature and society—Moore relies on a strategy of what could be called *discursive bundling*. He either utilizes hyphens, combined with the preposition “in,” meant to suggest internal relations (for example, “capitalism-in-nature” and “nature-in-capitalism” [Moore 2014, 12]), or he relies on various metaphors such as bundles, hybrids, and webs. The historical process, we are led to believe, can be regarded as little more than a process of bundling (and unbundling) of society-nature. Thus “civilizations,” Moore (2015a, 46) declares, in line with Latour, “are bundles of relations between human and extra-human natures. These bundles are formed, stabilized and periodically disrupted,” and make up the “web of life” or the “world-ecology.” He queries: “If Nature and Society are the *results* of this messy bundle of relations, what do we call the bundle itself? My term for this is the *oikeios*”—an ancient Greek term that Moore employs to refer to world ecology (Moore 2011a, 5). Ontologically, then, in the manner of the neutral monism of Bertrand Russell and other thinkers (e.g. Latour), the world is seen as made up of bundled particularities (Maclean 2014, 119–31; Russell 1992, 10, 382–93; Latour 2005, 17, 134, 139). None other than Marx himself, Moore (2015a, 46; 2014, 12; 2015b, 28) claims, saw the world as “‘bundled’ in a world-ecological sense”—as supposedly evidenced by his treatments of the intertwining of external nature and society. The implication of course is that the bundling process constitutes the essence of the Marxian dialectic, conceived in social-monist and singular terms.

With this Latourian Marxist and neutral monist outlook as his basis, Moore (2015a, 21) proceeds to criticize—under the cover of a rejection of the “Cartesian binary”—all those Marxian ecological theorists who have adopted the conceptual framework of Marx’s metabolism theory. For Marx, the “social metabolism” (i.e. the labor process) under capitalism is a particular, alienated form of the “metabolism of nature and society,” occurring *within* the “universal metabolism of nature.” In some cases, this takes the form of an actual “rift” in the process of “metabolic interaction” (Marx 1981, 949; Marx and Engels 1975a, vol. 30, 63; Marx 1976, 637).²¹ Such a conception, Moore (2015a, 21, 80) claims, is a “Cartesian binary,” since it posits “two metabolisms, one Social and one Natural.” (Here he seems to think that one cannot speak abstractly, as Marx did, of a metabolic relation of humanity to the earth through production, i.e. a social metabolism, while also recognizing the universal metabolism of nature within which this social metabolism necessarily exists.)

“The Marxist metabolism school” (by which he means second-stage ecosocialist thinkers like Burkett and Foster), Moore (2015a, 80) contends, is to be doubly condemned,

²⁰ The concepts of totality and mediation, as Lukács above all taught, are central to the Marxian dialectic, and transcend simple notions of monism and dualism. See Mészáros (1972).

²¹ Moore’s main target in this respect is Foster, Clark and York (2010). On Marx’s use of the wider conceptual framework of social metabolism, the universal metabolism of nature, and the metabolic rift, see Foster (2013, 2015c).

for supposing that capitalism's alienated social metabolism gives rise to various metabolic rifts—as this would suggest a still deeper epistemological dualism on their part. In opposition to this, Moore (2014; 2015a, 76, 79, 86) substitutes his own “singular metabolism,” which is nothing other than the idealized capitalist notion of the market expanded to encompass the entire web of life. This view adamantly rejects the whole notion of “natural limits,” or the idea that in numerous cases ecological “limits are outside of us” (Moore 2011b, 139, 151), constituting insuperable barriers to production—as in Marx's (1976, 637) own underscoring of the “eternal natural condition for the lasting fertility of the soil.”

To point to antagonistic relations between capitalism and nature (or to conceive of nature as apart from society even by means of abstraction) is for Moore (2011a, 5; 2015a, 76) to fall prey to the “Cartesian divide.” In such cases, he claims, the *bundled, monist character of reality*, which capitalism above all has brought into being, is denied (Moore 2011a, 5; 2015a, 76). Nature or the web of life has become so inseparable from capitalism, in his world ecology view, that he can write: “Capitalism internalizes—however partially—the relations of the biosphere,” while at the same time contending that the forces of capital configure “*the biosphere's internalization of capitalism's process*” (Moore 2014, 12; also 2015b, 28; emphasis added). What is systematically excluded from this world-ecological analysis, is what Moore (2015a, 15) derides as “the metabolic fetish of Green materialism,” with its “narrowly biophysical” conception of Earth system flows, seen as relatively autonomous from capitalist processes.

In this abstract conception, in which capitalism is more real than nature, there is no longer an ontology of nature (or an ontology of being); there is only the ontology of the market. The environment, following the bourgeois view, is thus reduced to little more than a set of inputs or “cheaps” (food, labor, raw materials, and energy) to the economy (Moore 2015a, 118–19; 2015b). The whole question of *ecological crisis* is seen simply as the basis of *economic crisis*. It is manifested almost invariably as one of “underproduction,” reflected in scarcity—understood in commodity price terms as various degrees of cheapness (Moore 2011a, 20, 29–30). (Moore downplays the notion of ecological overproduction, reflected in overflowing ecological sinks.) With increasing shortages of raw materials, prices tend to rise, threatening the economy through falling profits. Nevertheless, the capitalist world ecology is eternally triumphant, internalizing more and more of its environment, thereby reaffirming its existence as the one, *singular metabolism*. “Capital and power (and more than this, of course) unfold in the web of life, a totality that is shaped by manifold civilizational projects,” uniting all human and extra-human relations by means of its universalizing “global value-relations” (Moore 2014, 16–17).

Moore (2015a, 80) thus warns of “the fetishization of natural limits” characteristic of the environmental movement, and tells his readers that to focus on the rift (or rifts) that capitalism creates in the biogeochemical processes of the planet “gives us only one flavor of crisis—the apocalypse.” In the same vein, we are told that “it would be mystifying to say that the limits of capitalism are ultimately determined by the biosphere itself, although in an abstract sense this is true” (Moore 2015a, 60). Instead, it would be better, we are led to believe, to follow Latour in insisting capitalism is infinitely adaptable in its production (or co-production) of “bundles of human and extra-human nature,” allowing

it to surmount any putative global ecological catastrophe (Moore 2014, 12; 2015a, 85; Latour 2012).²²

Attacking the so-called dualism of ecological Marxian theorists who put capitalism's alienation of nature at the very center of their analysis, Moore contends that it is the "Cartesian binary" of these thinkers that keeps them from understanding that "value-relations, which are themselves co-produced, make that [world-ecological] coherence" that constitutes capitalism's main achievement. "It is easy to talk," he expounds, "about the 'limits to growth' as if they were imposed by (external) Nature. But the reality is thornier, more complex—and also more hopeful" (Moore 2015a, 20–21, 85–86). Ecological problems in today's world should not be viewed as constituting so much a threatened "cataclysm," in the manner of those focusing on the dangers of climate change or the sixth extinction, but rather should be perceived as simply "the 'normal'" operation of capitalism's socio-economic cycles within the web of life. After all, "history is replete with instances of capitalism overcoming seemingly insuperable 'natural limits'"—so why not at the level of the Earth system itself (Moore 2014, 13)? Engels's metaphorical reference to the "revenge" of nature, arising from ecological catastrophes brought on by human action, is rejected by Moore as itself a dualistic (rather than dialectical) view (Marx and Engels 1975a, vol. 25, 461; Moore 2015a, 80).

The result of all of this, as *Molecular Red's* (2015a) author McKenzie Wark notes in a critique of Moore, is to produce "a variant of social reductionism" (2015b). Indeed, we are suddenly back in the world of "idealistic Monism," of which philosophers like C. E. M. Joad (1934, 115) complained in the 1930s—though this time in the form of capitalism's supposed infinite social constructionism. As Wark rightly observes, the scientific conception of an objective world of nature, i.e. the Earth system itself, simply vanishes behind "the 'socially constructed' interiors of culture" that constitute Moore's capitalist "world ecology" (2015b). Here the issue of the human alienation of nature in a commodified society vanishes.

For Roy Bhaskar (1993, 270) in *Dialectic: The Pulse of Freedom*, "there are times when it is essential to disconnect, separate, distinguish, and divide." The proposition "that differentiation is a necessary condition of totality and diversity of unity" is one that "all good dialecticians have understood" throughout the history of philosophy. Complicating this, however, according to Bhaskar, is "the characteristically subjectivist totalizing idealism of Western Marxism" (363). In the name of combatting Cartesian dualism (as well as Soviet dialectical materialism), western Marxism has commonly projected an abstract, hypostatized reality in which the larger material world outside society is almost entirely absent, except as the product of the social domination (or social production) of nature.

²² Bruno Latour and Noel Castree, with their philosophies of bundling, are presented by Moore as constituting the most advanced forms of so-called "relational critiques of dualism" (see Moore 2014, 14, 18). The basis of Latour's analysis in "neutral monism" is noted by Morelle (2012, 255). The concept of bundling used by Latour and other actor-network theorists, and adopted by Moore as a way of transcending dualism, has of course a long history in theories of "neutral monism," as advocated by thinkers such as Bertrand Russell (1966, 131–46). See also Maclean (2014, 119–31), and Stubenberg (2014). In Russell's thought, the neutral monist concept of the bundling of particularities was introduced as a way of attacking dualism, while excluding dialectics (to which Russell was violently opposed). In his earlier work, Russell (1992, iv–5, 10, 382–83) had himself developed a powerful critique of monism, which, however, only led to his subsequent adoption of neutral monism as he sought to counter Marxian theory in the 1930s. In Russell's version of neutral monism, reality consisted of what we now call bundled entities which in large part obviated the need for the distinctions between mind and matter.

“Monism and subject-object identity theory” (355), Bhaskar contends, are associated with “the anthropic fallacy” (205, 394), whereby *being* is reduced to *human being*, and the *objective world* to *society*.²³ But in today’s age of epochal ecological crisis, to fall prey to such a narrow anthropic monism could prove fatal to a majority of the world’s species, not excluding humanity itself.

Where the global ecological climacteric is concerned, there can be no doubt that the main driving force behind today’s growing rift in the biogeochemical cycles of the earth is capitalism. In the face of the very real bifurcation of the world in the Anthropocene by capitalism’s alienated social-metabolic reproduction, to focus on the truisms that in the end the world is all one, and that human production inevitably creates new hybrid forms of human-nature linkages (as if this in itself transcends natural processes and laws), is to downplay the real depths of the crisis in which the world is now placed. As Marx pointed out in the *Grundrisse*,

It is not the *unity* of living and active humanity with the natural, inorganic conditions of their metabolic exchange with nature, and hence their appropriation with nature, which requires explanation or is the result of historic process, but rather the *separation* between these inorganic conditions of human existence and this active existence, a separation which is completely posited only in the relation of wage labour and capital. (Marx 1973, 489; emphasis in original)

In the Marxian view updated for our time, capitalism has not only inverted the world, it threatens to drive a stake through its heart. The world is not moving under capitalism toward the *unity* of humanity and nature but toward a dangerous *separation*: one, though, that represents, in the alienated context of class society, an “unconscious socialist tendency,” in that it gives rise to the necessity of revolutionary human intervention.

3.2. The production of nature: Smith and Castree

Social-constructionist monism, which systematically excludes the alienation of nature under capitalism from its analysis, has recently entered ecosocialist discussions mainly through the work of thinkers like Bensaïd and Moore. But it has its deepest development in the “production of nature” school of Marxian geography, introduced into the academy by Neil Smith and Noel Castree. As Smith puts it, “nature ‘itself’ is not much of a Marxist category” (1996, 49). The natural world can therefore be dissolved for the most part as a category, since “nature,” he says, “is nothing if it is not social” (Smith 2008, 47). In today’s world, Smith tells us, “the production of nature becomes capitalized ‘all the way down.’” We are thus experiencing “the real subsumption of nature” within capitalism (Smith 2006, 27–29). Nor is this to be seen in negative or contradictory terms, since capitalism plays a vital, progressive role in this respect. “The historical production of nature,” Smith (2008, 81) declares, represents “the unity of nature toward which capitalism drives.”

In Smith’s view, both the Frankfurt School (meaning Horkheimer, Adorno, and Schmidt) and the ecological movement are to be condemned for their “fetishism of nature” and “nature idolatry” (Smith 2008, 45–46; 1996, 40). In contrast, the

²³ For Bhaskar (1993, 205, 397), the “anthropic fallacy,” whereby *being* is reduced to *human being*, is frequently concealed behind the “epistemic fallacy,” whereby *being* is reduced to *knowledge*.

development of Marxian social science through the production of nature perspective, he suggests, provides the more universal outlook lacking not only in environmentalism but also in natural science with its idolatry of the “so-called laws of nature” (Smith 2006, 23). For Smith (2008, 247) the dualism still prevalent within the environmental movement and the ecological sciences—insofar as they neglect to adopt the production of nature perspective—leads to a “left apocalypticism” that fails to recognize the unifying relation of capitalism with respect to nature.

Opposing the language of ecology, even when it is understood to be largely metaphorical, Smith insists that “the ambition to ‘save nature’ is utterly self-defeating insofar as it reaffirms the externality (otherness) of a nature with and within which human societies are inextricably intermeshed” (Smith 1996, 40). Even the current focus on global warming is decried as evidence of dualism. “In the end, the attempt to distinguish social [i.e. anthropogenic] vis-à-vis natural contributions to climate change,” Smith (2008, 244) writes,

... is not only a fool’s debate but a fool’s philosophy: it leaves sacrosanct the chasm between nature and society—nature in one corner, society in the other—which is precisely the shibboleth of modern Western thought that the “production of nature” thesis sought to corrode.

Fiercely opposed to the direction in which the environmental and scientific debate on climate change was going, Smith (2008, 244) stressed his own historical skepticism: “One does not have to be a ‘global warming denier,’” he wrote, “. . . to be a skeptic concerning the ways that a global public is being stampeded into accepting wave upon wave of technical, economic, and social change, framed as necessary for immediate planetary survival” (Smith 2008, 244). In these terms, both “saving nature” and what he dubbed a back-to-nature “saviour environmentalism” were to be decried (Smith 1998, 279–80).²⁴

According to Castree, Smith’s leading follower within radical geography, the admittedly “hyper-constructionist,” even Promethean, thrust of Smith’s own analysis, can be seen in his assumption that “nature becomes internal to capitalism in such a way that the very distinction implied by using these terms is eroded and undermined” (Castree 2000, 27–28; also 1995, 20; 2001, 204–5; 2015a)—to be replaced by a concept of “socio-nature” as in Swyngedouw (1999, 446–47).²⁵ Marx, Castree points out, avoided falling prey to “the monistic doctrine of universal nature” (Castree and Braun 1998, 7). However, Smith, in promoting his own Marxian production of nature perspective as a corrective to Marx, steered toward a kind of social or anthropocentric monism—or a “monism centered on the labor process” (Castree 1995, 20; 2015a). He therefore arguably fell into the opposite trap of hyper-social constructionism. In Smith’s monist outlook, *universal society*, in effect, replaced *universal nature*.

²⁴ Smith criticized the “left romancing of nature,” questioning in this regard both ecofeminism and indigenous peoples for their conceptions of “the earth mother” (1998, 279–80).

²⁵ Castree refers again and again in his various writings to Smith’s vulnerability to the interpretation of hyper-social constructionism. He thus raises it as a fundamental issue that needs to be fixed—in Castree’s case by providing a more Latourian version of Smith’s production of nature perspective. Nevertheless, Castree has recently suggested that, despite appearances to the contrary, he doesn’t think that it was Smith’s real intention to put forward a hyper-constructionist argument (Castree 2015a, 286). But with all the evidence that Castree has himself provided on Smith’s tendencies on this score, coupled with his own predilections toward a strong social constructionism, this weak attempt to defend Smith in this respect has a very hollow ring to it. For example, Castree resorts to arguing that Smith was “*anthropomorphic* without being anthropocentric and Promethean” (2001, 205; emphasis in original).

For this reason, Castree claims—looking at matters from the Latourian-Marxist perspective he now favors—

Smith gives us an explanatory monism, which far from *resolving* the problems of dualism, gives capitalism all the power in the society-nature relation and therefore *erases* nature altogether in the guise of making nondualistic theoretical space for it. That is, in Smith, the capital “side” of the relation with nature seems to swallow up the latter altogether. (Castree 2002, 131)²⁶

Castree’s own solution to this dilemma, going beyond Smith himself, is to link Smith’s production of nature theory with Latour’s ANT and its bundles of hybrids (Castree 2002; Castree and Braun 1998, 6).

This monistic production-of-nature outlook, in the forms presented by Smith, and as modified by Castree, became the basis for criticizing all forms of Cartesian “dualism”—directed not simply at liberal analysis, but also most ecological and most socialist thought. Thus Smith (2008, 31) leveled the accusation that Marx advanced “a certain version of the conceptual dualism of nature.” While Castree, for his part, argued that ecological Marxist theorists “*reintroduced* nature’s putative separateness” (Castree 2000, 8; emphasis in original).

Castree today clearly seeks to interface with Latour’s neutral monist ANT and notions of hybridity, as a way out of the dualism of nature and society, while also going beyond Smith’s production of nature perspective (Castree and Macmillan 2001; Castree 2002). Latour’s neutral monism relies on what he calls “infra-language,” i.e. bundling things together and conceiving things in terms of shifting imbroglios (Latour 2005, 30, 49, 103, 133; McGee 2014, 48). Hence, Latour’s overall analytical approach is analogous to Leibniz’s monads with their internal relations. Each discursively bundled entity contains within it a “complete recapitulation of all possible actions” (Latour 1996, 63) and thus constitutes a kind of windowless monad, referring to the whole.²⁷

The new left hybrid theories are fond of references to cyborgs, quasi-objects, bundles, and imbroglios: anything that suggests the blurring of boundaries between humans, animals, and machines (e.g. Castree and Macmillan 2001, 211–18; Castree 2003, 206; White, Rudy, and Gareau 2015). In the Anthropocene, however, such a perspective easily takes on a reactionary frame insofar as it removes sharp contradictions, replacing them with nebulous imbroglios. The result of such “deconstructive erudition,” to adopt a phrase of Smith (1998, 279), is to undermine all genuine radical praxis, implicitly supporting the status quo.

Not surprisingly, then, Latour has officially joined the hyper-capitalist Breakthrough Institute and its project of the ecological modernizing of the accumulation of capital. Likewise Castree has recently praised the theoretical perspective of the Breakthrough Institute, represented by Michael Shellenberger and Ted Nordhaus’s *Break Through* (2007), seeing it as overlapping with the visions of Smith and Latour. Thus Castree writes: “Certain strands of environmental and body-politics operative outside universities are now [like Smith] dispensing with ‘nature’ as an ontological referent (see, for example, Shellenberger and

²⁶ Castree is somewhat ambivalent about this Latourian critique of Smith, despite putting this forward as a rational critique, and giving it more than a little credence. He suggests in the end, however, that it is overdrawn, and there is more to say in Smith’s favor. Yet, Castree’s own disquiet in this respect, in which he signals that Smith’s position has major weaknesses, has led him to seek a synthesis between the Smithian production of nature and the Latourian bundled hybrids.

²⁷ On the role of Leibniz in Latour’s thought, see McGee (2014, 16–17, 42, 56, 83, 85–86).

Nordhaus 2007)” (Castree 2015a, 291). For post-environmentalists such as Shellenberger and Nordhaus, as in the cases of Smith, Castree, and Moore, capitalism has simply subsumed nature. Traditional environmentalism, even in left terms, no longer makes sense from such an anthropocentric-monist perspective, since the web of life is now synonymous with capitalism.

It should be noted that, Latour (2004, 94), though denying the alienated mediation of nature and society under capitalism, and thus proposing (like Smith) to dispense with nature’s ontological status altogether (along with that of society), nonetheless remarks at one point that “if dualism will not do, monism will not do either.” Yet, his emphasis on bundling (adopted as well by thinkers such as Moore [2015a] and White, Rudy, and Gareau [2015]) has, as we have seen, long been the characteristic method of neutral monism, as propounded by Russell and others, which seeks to replace the dualisms of the mental and physical and the social and natural with bundled particularities.

Indeed, Latour’s own commitment to a strong social constructionism (if not entirely denying realism) is not to be doubted. He criticizes what he calls “the ‘bad’ philosophy of ecology” of the environmental movement and science. Instead, he opts for a “political ecology” in which all human and non-human relations are simply political (Latour 2004, 246). “Political philosophy abruptly finds itself with the obligation to *internalize* the environment.” The result is that there is no longer an external environment (Latour 2004, 58; emphasis in original). Environmentalism thus lacks any definite referent in nature. Although Latour acknowledges that ANT has been criticized for recreating “‘that night when all cows are grey’ ridiculed by Hegel,” he says that his analysis in fact leads in “exactly the opposite direction,” and is altogether more uplifting. “Instead of ‘sinking into relativism,’ it is relatively easy to float upon it” (Latour 1991, 130). His role as a senior fellow of the Breakthrough Institute, however, exposes this as a mere rationalization of the hegemonic capitalist domination of nature, which he is now clearly content to “float upon.”

3.3. *The nature of environmental history: Cronon and Worster*

The monistic-idealist outlook preferred by many left ecological thinkers is also evident in radical environmental history over the past two decades. This is exemplified by the work of thinkers like William Cronon and Donald Worster. Cronon is well known for his social constructionist insistence on the cultural mixing of nature and society to the extent that the former, in any kind of pure form, largely disappears—even as a necessary abstraction—going against the viewpoint of radical ecologists. Criticizing deep ecology, he insists that we must abandon the “set of bipolar moral scales in which the human and the nonhuman, the unnatural and the natural . . . serve as our conceptual map for understanding and valuing the world” (Cronon 1995, 89). Instead we must embrace the cultural context of nature. Although Cronon’s position certainly represents an intellectually rational strategy for a cultural historian, it carefully avoids the question of ecological sustainability, while largely subsuming natural history under cultural history. The trick here, for such practitioners, is always to show how much of nature can be reduced to culture—and not how much of culture is dependent on the natural world. In this conception, the radical environmental movement is portrayed as the product of a defunct modernism, which adheres to the Enlightenment “dualism” of nature and society (85). This is to be displaced

by a more postmodernist understanding—one that revels in the cultural relativism of a world that is so intermeshed that nature and culture can no longer be distinguished. Culture is thereby taken to be the sole reality. The end result is an approach that excludes any ecological critique rooted in the capitalist alienation of nature.

Adopting an idealist and anti-materialist approach, Donald Worster in his history of ecological science, *Nature's Economy* (1994), criticizes the great early twentieth century founding figures of materialist ecology within science: British botanist Arthur Tansley, famous for introducing the ecosystem concept, and British zoologist Charles Elton, equally famous for developing a reflexive view of animal ecology. In Worster's terms, these thinkers are to be dismissed as mechanistic, while the work of idealist-teleological thinkers such as US botanist Frederick Clements and General Jan Christiaan Smuts in South Africa are to be celebrated as representing holism (Worster 1994, 239–42, 294–304, 322). Clements proposed the teleological concept of ecology as a “superorganism” reflected in successions of plant communities—a view that was enormously influential in ecological science, but which was later rejected by Tansley in favor of a materialist ecology based on ecosystems. Smuts, who coined the term “holism” (as well as “apartheid”), conceived of it as part of an idealist ecological racism, which he sought to put into practice as head of the South African state.

It was the ecological racist “holism” of Smuts and his followers that induced Tansley and others socialist scientists, such as Hogben, to counter Smuts with a materialist, co-evolutionary approach to nature and the nature-society relation. Nevertheless, Worster (1994, 322, 461) singles out the Empire-building General Smuts—known for arresting Gandhi, his murderous mass attacks on black populations (in which he pioneered in the aerial bombing of one's own population), and for his role in conceiving apartheid—as representing an overall philosophy of ecological holism (Foster, Clark, and York 2010, 312–40).²⁸ Yet, in the same book Worster (1994, 426–27) sees no contradiction in taking Marx and Engels to task for allegedly lacking a holistic “feeling for nature” or for “environmental preservation.”²⁹

All of this suggests that Marx's dialectical-historical view, rather than the recourse to an abstract monism or holism, or postmodernist hybridism, constitutes the only meaningful critical response to the dualism of bourgeois society. Marx's own anti-dualism was clearly demonstrated in his critique of Proudhon, where he remarked that “one finds with him from the beginning a *dualism* between life and ideas, between soul and body, a dualism which recurs in many forms” (Marx and Engels 1975b, 38; emphasis in original). For Marx the dualisms of bourgeois society were a product of an alienated relation to production, and hence to social metabolism. This necessitated the transcendence of existing historical forms, responding to the crises and contradictions of capitalist society. It was his recognition of the metabolic rift between nature and society that led Marx to shift his attention to intensive ecological studies, particularly in the last two decades of his life (see Saito 2016), and that helped spur Engels's explorations of the dialectics of nature.

So little did Marx subscribe to an anthropocentric monism denying the objective force of nature, that he extended his studies deep into the evolutionary, paleontological record,

²⁸ The same favorable position towards Smuts as representing ecological holism was advanced by Merchant (1980, 252, 292–93), who also criticized Tansley as mechanistic.

²⁹ For an opposing interpretation on Marx and Engels and the intrinsic value of nature, see Foster and Burkett (2016, 34–56).

taking notes on the role of isotherms (climate zones) in species extinction—*prior to the origin of the human species* (see Marx and Engels 2011, 214–19; Jukes 1872, 476–512; Hansen 2009, 146–47). Likewise Engels delved extensively into cosmology (Marx and Engels 1975a, vol. 25, 331–35; Foster and Burkett 2016, 165–203). If science was a human product, clearly not all of what science studied, in Marx and Engels’s view, was the product of humanity.

Monism first arose as a major movement in the late nineteenth century, primarily as an accompaniment to social Darwinism and mechanistic materialism, although adopted by some idealists such as Smuts. Among the leading names associated with the early monist movement were Haeckel, Eugen Dühring, Enrico Ferri, Georgi Plekhanov, and Smuts (see Polianski 2012, 197–222). Haeckel, Dühring, Ferri, and Smuts all developed it in a racist direction, pointing toward fascism in the cases of the first three, and apartheid in the case of the last. Plekhanov promoted a “monist interpretation of history,” which represented a kind of mechanical materialism, although couched as “dialectical materialism” (Plekhanov 1974, 480–697). For all of these thinkers, with the partial exception of Plekhanov, monism had to do with naturalistic determinism. Abstract “monism” of this type was strongly criticized by both Engels and Lenin (Marx and Engels 1975a, vol. 25, 489, 531, 681; Lenin 1916; 1964, 209–15).

Today’s social monism, or what Bhaskar (1991, 174; 1983, 259) has called “historicized anthropomorphic monism,” associated with numerous Western Marxist and postmodernist left thinkers, comes from the opposite pole, from that of thinkers like Haeckel, Dühring, Ferri, and Smuts. Rather than subsuming *society in nature*, it subsumes *nature in society*. In doing so, however, it tends to suppress the real ecological contradictions of capitalism, thus dismissing them as “catastrophism” and “apocalypticism”—as in the writings of Smith, Castree, and Moore.

Indeed, Smith, in the words of Castree (2015b, 9), argued that “the environmental sciences (and the wider ecological movement) have been co-opted by it [neoliberal environmentalism]. To the extent that they reify ‘nature’ and talk of things like ‘mass extinction,’ the sciences of environment are today a depoliticizing force.”³⁰ From this standpoint, the close relation between the environmental movement and ecological science was nothing but a dead end.

4. The return of the dialectics of nature/ecology

Western Marxism’s critique of Engels’s dialectics of nature had its source in a famous footnote in the young Georg Lukács’s *History and Class Consciousness* which questioned the validity of a dialectics going beyond the direct subject-object relation of human consciousness and human history (Lukács 1971, 24). There, Lukács seemingly severed dialectics from any conception of external nature, outside of human action. Yet, even in *History and Class Consciousness*, Lukács (1971, 207) had insisted on the possibility of a limited, “merely objective dialectics of nature”—conforming to the Doctrine of Being and the Doctrine of Essence, the first two subdivisions of Hegel’s

³⁰ Castree has adopted a more realistic approach to climate change and other environmental changes in some of his recent work, where he is no longer simply dismissive of thinkers such as Naomi Klein (see Castree 2015b). Nevertheless, he characteristically attributes society’s failure to address global environmental problems to “dualism” rather than to capitalism itself, thereby excluding the reality of alienation.

Logic—depicting “a dialectics of movement witnessed by the detached observer” (see Hegel 1975). Such an “objective dialectics of nature” constituted a crucial critical perspective, even if falling short of a full subject-object dialectic as in the human sciences. A few years later, as shown by his recently discovered *Tailism* (2003) manuscript, Lukács was to insist that not only had he *not* rejected the dialectics of nature in its entirety in *History and Class Consciousness*, but that Marx’s concept of the metabolism of society and nature through labor-production offered the key ontological-epistemological basis for such an outlook.

Lukács extended this view in his later writings, including his famous 1967 preface to *History and Class Consciousness*. As he put it there, the “basic Marxist category, labour as the mediator of the metabolic interaction between society and nature, is missing” in the original argument in *History and Class Consciousness* (Lukács 1971, xvii). Moreover, not only Marx’s metabolism argument, but also scientific experimentation (as Engels had suggested), provided the basis for a materialist dialectics of nature. At the same time Lukács declared in his *Conversations* that since human life is “based on a metabolism with nature, it goes without saying that certain truths which we acquire in the process of carrying out this metabolism have a general validity—for example, the truths of mathematics, geometry, physics, and so on” (Lukács 1974, 43; 1980, 17–19). Marx’s analysis of social metabolism, according to Lukács (1980, 56–59), incorporated the “reciprocal relationship between man and nature” as an “insuperable precondition” of social reproduction. “The natural boundary” to human production, in this conception, “can only retreat, it can never fully disappear” (Lukács 1980, 34).

Lukács’s emphasis on the “objective dialectic” of materialism—divorced from the idealist Hegelian subject-object dialectic with its promise of complete reflexivity within a closed circle—was carried forward by István Mészáros, Lukács’s assistant and younger colleague. Mészáros was to emerge as one of the great Marxian theorists of the late twentieth century through his magisterial works *Marx’s Theory of Alienation* (1970) and *Beyond Capital* (1995). Mészáros (1970, 104) conceived the “conceptual structure” of Marx’s theory of alienation in terms of the triadic relation of humanity-production-nature, with production constituting a form of mediation (metabolism) between humanity and nature. In this way human beings could be conceived as the “self-mediating” beings of nature (Mészáros 1970, 104, 162–65).

It should not surprise us therefore that it was Mészáros who was to provide the first comprehensive Marxian critique of the emerging planetary ecological crisis in his 1971 Deutscher Prize Lecture—published a year before the Club of Rome’s *Limits to Growth* (Meadows et al. 1972)—in which he argued that the waste-based accumulation characterizing US monopoly capitalism could not be expanded globally without breaking the ecological budget of the entire planet (Mészáros 2015, 23–51). In *Beyond Capital*, he was to develop this further in terms of a full-scale critique of capitalism’s alienated social metabolism, including its ecological effects—in his discussion of “the activation of capital’s absolute limits” associated with the “destruction of the conditions of social metabolic reproduction” (Mészáros 1995, 170–77). In sharp contrast to hyper-social constructionists on the left, who charged the environmental movement with having succumbed to a “fetishism of natural limits” (Smith 2008, 45–46), Mészáros early on incorporated the objective-historical conditions of the materialist dialectic and science in order to confront the problem of the ecological rift.

In Marx's analysis, social metabolism stood for the labor and production process (and the process of social reproduction in the broadest sense), whereby humanity transformed its material relation with nature in a co-evolutionary manner, involving *both* labor and nature (Marx 1938, 3). The commodity was constituted not only by internal relations via exchange value and value (or the crystallization of abstract labor), but also by what, from a social standpoint, were largely external (environmental) relations, related to use value. Marx's notion of the universal metabolism of nature made it clear that the *social* metabolism was a set of relations within this *universal* metabolism. Under capitalism this was ultimately an alienated relation, reflecting "an irreparable rift in the interdependent process of social metabolism, a metabolism prescribed by the natural laws of life itself" (Marx 1981, 949). As David Harvey (2012, 12–14) has noted, the "universality" of Marx's conception of "the metabolic relation to nature" constituted a kind of outer (as well as inner) set of conditions or boundary in his conception of reality which allowed him to link all the "different moments" of his critique of political economy—and indeed his ecological critique—together.

It is precisely this materialist dialectics, as we have seen, that allows us to transcend the simple dualistic and monistic views of the world and to explore its complexity and contradictions as they arise dynamically, and as they emerge from real-world antagonisms. If Kant sought, unsuccessfully, to transcend Cartesian dualism by suggesting that the world was *mind-like*, thus setting the stage for the tradition of absolute idealism and the Hegelian dialectic that followed, Marx and Engels, as materialists, saw the mind as *world-like*, and advanced a materialist dialectic in response (see Popper 2002, 437; Needham 1943, 15). Such an approach follows Hegel (1977, 11) in recognizing that "the true is the whole," but acknowledges that the whole in this sense cannot be grasped immediately; instead it requires an analysis of mediations and contradictions, in which the internal and external, the mediated particular and totality, the social and the natural are grasped in their fluid motion. "Inside" and "outside," as Richard Levins wrote, "are not properties of nature but of science" (1998, 559). Yet, in our investigations, which depend on such abstractions, we cannot afford to ignore one or the other.

The present ecological crisis is forcing us to reconsider once again the notion of the dialectic of nature—most convincingly presented in recent decades by thinkers like Levins, Richard Lewontin, and Stephen Jay Gould. "Dialectical materialism" in the sense of these thinkers—see, for example, Lewontin and Levin's use of the concept in *Biology under the Influence* (2007, 397)—does not stand for the dogmatic, mechanical views that were sometimes crudely advanced in the Soviet Union under this label. Rather it harkens back to theories of dynamics, complexity, contradiction, emergence, and transformation in the analysis of the world at large, embodied in the work of Marx and Engels (and Lenin), and exemplified in the discoveries of socialist scientists and cultural theorists in the 1930s and 1940s in Britain, in particular. Included among the scientists (and philosophers of science) were figures such as Bernal, Haldane, Needham, Hogben, Levy, Benjamin Farrington, and V. Gordon Childe; and among the cultural theorists figures such as Caudwell and George Thomson (see Sheehan 1985; Thomson 1950).³¹ Also related to these were the more Fabian-style ecological scientists Lankester and Tansley (see Ayres 2012, 41–43).

³¹ The general views of many of these thinkers (though not their ecological analyses) are treated in Sheehan (1985).

Further, it is important not to ignore the very real conceptual breakthroughs (not without historical contradictions) of Soviet ecological thinkers, some of whom, such as Nikolai Bukharin, Boris Hessen, and Nikolai Vavilov, died in the Stalinist purges, but also including many others who made crucial advances. A short list of these would include: Pavlov, who introduced the term Anthropocene; Vernadsky who had an immense influence on Soviet thought through his magisterial work, *The Biosphere* (1998); Alexander I. Oparin, who simultaneously with Haldane introduced the modern materialist theory of life's origin; Nikolaevich Sukachev, the developer of biogeocoenosis as a more sophisticated form of ecosystem analysis; Mikhail Budyko, the leading Soviet climatologist and the key discoverer of accelerated global warming (through his analysis of the albedo effect); and Ivan T. Frolov, the pioneering philosopher of late Soviet ecology (see Foster 2015b; Foster, Clark, and York 2010, 242–45; also Ursul 1983).

Globally, Marxian (and socialist) theory has a rich history of ecological thought to draw upon—though most of this rich tradition is scarcely known to those who consider themselves Marxists, as a result of Western Marxism's subsequent alienation from the dialectics of nature and science. This was further complicated by Cold War divisions, in which all Soviet contributions were condemned out of hand as allegedly products of a monolithic “Stalinism.” Consequently, the critical ecological discoveries of Soviet science were ignored by Western thought generally, even if incorporated into the core body of science.

The recovery on a higher level, of the dialectics of nature—to be seen as connected to the dialectics of society—is a vital task for Marxian ecological theorists today, who are seeking to explore the ecological contradictions of the Anthropocene, and to pave a way to a truly revolutionary praxis. The seeds of a more comprehensive dialectical ecology—a full historical materialist critique rooted in the materialist conception of nature as well as the materialist conception of history—already exist at present. As Caudwell wrote in the mid-1930s in his *Illusion and Reality* (1946)—shortly before dying in 1937 (age 29) at his machine gun while he covered the retreat of his comrades in the British battalion of the International Brigade in the Spanish Civil War:

But men cannot change Nature without changing themselves. The full understanding of this mutual interpenetration or reflexive movement of men and Nature, mediated by the necessary and developing relations known as society, is the *recognition* of necessity, not only in Nature but in ourselves and therefore also in society. Viewed objectively this active subject-object relation is science, viewed subjectively it is art; but as consciousness emerging in active union with practice it is simply concrete living—the whole process of working, feeling, thinking and behaving like a human individual in one world of individuals and Nature. (Caudwell 1946, 279; emphasis in original)

It is not a crude mechanistic or idealistic monism, any more than dualism, that Marxian theory offers in relation to the crisis of the Anthropocene, but rather an open-ended materialist dialectical outlook aimed at totality but without closure, revealing both the limitations and the possibilities of our time. What it points to is the need to create a new earthly existence—the object of which will no longer be the conquest of nature but a world of sustainable human development (Burkett 2005). “Freedom,” Engels wrote, “is the insight into necessity” (Marx and Engels 1975a, vol. 25, 105; Lukács 1980, 120–25). Today the freedom of necessity is best exemplified by ecological revolution (Foster 2009).

Such an ecological revolution must be aimed at creating a new “ecological civilization,” going beyond capitalist society (Magdoff 2011). What is required is social action that will

generate a more collective, egalitarian, and sustainable—and therefore socialist—mode of global production. An ecological civilization conceived in this way will necessarily reverse the “rift in the interdependent process of social metabolism” between nature and society, and bring about the “restoration” of that essential relation (Marx 1976, 63–68; 1981, 949; Foster and Burkett 2016, 239–40)—while meeting no-less-essential human needs. From this perspective, humanity has yet to face its greatest historical challenge.

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