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Engels' Fourfold Revenge: On the Implications of Neglecting Engelsian Dialectics in Science, Philosophy, Ecology, and Revolutionary Practice

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ABSTRACT: This paper confronts the familiar prejudice in Western Marxism that Engels' thought, as articulated in *Anti-Duhring* and the *Dialectics of Nature*, is of marginal interest and should be excised from Marxist theory. I argue that this view is mistaken. If we do not take seriously his insights about science, philosophy, nature, and history, his insights will take a fourfold revenge upon us. Natural science takes its revenge by unleashing technology that subjugates us in ways we cannot anticipate, understand or control. Philosophy, in turn, takes revenge on science for neglecting the philosophical presuppositions of its own worldview. Nature itself takes its revenge upon those who consider it to be some formless and passive matter, deprived of history and negativity, responding to our productive activity in surprising ways that, without a rational form of regulation, could lead to our own extinction. Lastly, history takes revenge on those 'well intentioned' actors who try to impose their will upon it without a scientific knowledge of its internal, necessary, and objective forces.

KEYWORDS: Engels, Marx, Marxist philosophy, ecology, natural sciences, history.

A FEW WORDS ON THE 'ENGELS' AFFAIR'

In my book *Marxismo y dialéctica de la naturaleza* (Marxism and Dialectics of Nature) (2019), I show the inconsistency of the anti-Engelsian tendencies common among Western Marxists, such as the young Lukács (1970), Avineri (1970), Schmidt (1977), Merleau-Ponty (1974), J.-P. Sartre (1963a),[1] Colletti (1973) and Kohan (1998). Usually, such tendencies attempt to separate the historical founders of Marxism and then set them

1. "The debate on the dialectics of nature in France […] began in 1948, when Jean-Paul Sartre, in his article Materialism and Revolution, advanced a number of objections […] against […] the dialectics of nature" (Gretskii 1966, 57–58).

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against one another.[2] According to Norman Levine, two opposed schools of thought emerged from this supposed contraposition: "one called Marxism and the other labeled Engelsism" (2006, XI). The first of the two, i.e., the (authentic) 'Marx's Marxism'—who would have guessed?—was to be considered Marxism proper, while the second (Engels'), we are told, was to become Soviet orthodox Marxism, a worthless, primitive, and naïve philosophy.[3]

As if that were not enough, these authors often accuse Engels of the worse kind of *political* crimes: guilty of the reactionary defects of the 2nd and 3rd Internationals (Kohan 1998, 24–37), of the intellectual poverty of German social-democracy and the cruelty of bolshevism (Avineri 1970, 144), responsible for the doctrinaire 'monologue' of the communist parties toward the masses (Holloway 2005, 131), and even for the collapse of the USSR (Levine 2006, 6). With such monstrous effects, it seems that *Anti-Dühring* and *Dialectics of Nature* must be sealed under 7 locks and the keys thrown to the bottom of the sea.

The crux of the matter when it comes to anti-Engelsianism is the rejection of dialectics in nature; since, according to the young Lukács (1971, xvi), "only a knowledge of society and the men who live in it is of relevance to philosophy." Accordingly, "Marxism does not have to try to talk about the laws of nature. Marxism, if a science, is a science of society" (Kohan 2003, 46). Hence the simplistic idea that nature, and the sciences that study it, are alien to Marxism; and those who intrude on such forbidden topics will end up like Lysenko, "who kept cutting rats' tails hoping that in the long run, they were going to be born without tails" (Kohan 2003, 30).[4]

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2. "[…] the difference between Marx and Engels is significant and striking" (Avineri 1970, 153). Usually, these supposed 'fundamental' differences are presented as differences in their philosophical background (e.g. Jones 2017).
3. "The polemical work Anti-Dühring, in particular, became immensely influential […]. It is a fact of major tragicomical proportions that a third of mankind professes these naive, amateurish speculations as its official philosophy" (Elster 1999, 11).
4. Leaving his faults aside, it was not Lysenko, nor any other Lamarckist, but Weismann—that is, precisely the anti-Lamarckist par excellence—who proposed such an experiment (to refute Lamarckism). The truth is that Lysenko never proposed such an absurd experiment to demonstrate the inheritance of acquired characteristics. It is a widely known fact that mutilations, scars, and many other direct effects of the environment on the body are not inherited. Any layperson in the field could cite dozens of examples of this (burns, tattoos, amputations, extraction of molars, circumcision, etc.). So that Weismann's experiment would simply confirm a trivial fact but would not refute Lamarckism. On this topic, Olarieta Alberdi 2012, 130; Lewontin and Levins 2009, 163–196.

THE REVENGE OF NATURAL SCIENCE

A neo-Kantian dualism becomes evident in these anti-Engelsian trends, i.e., that between the sciences of nature and 'the sciences of the spirit.' Resembling Dilthey's (1949, 13–28) dichotomy, they present an incompatibility between (deterministic) natural phenomena with the (free) human realm. Far from the synthesis wanted by Marx (1988, 111) of social and natural sciences into 'a single science,' Engels' detractors seem determined to open a chasm between them, a sort of cleavage of culture into two great 'autonomous fields,' into two cultures (cf. Snow 2012).

In Kohan's opinion, since "capitalism is not going to fall in virtue of the ineluctable mandate seeds and trees or by the grace of the boiling water that performs a leap from quantity to quality. [Marxism] can only strike with all its strength once deprived of its naturalist cosmology" (1998, 73). In short: Marxists should exclusively focus on social and political problems, that is, "what interest us the most" (Kohan 1998, 75). As for the natural sciences, "let the natural scientists deal with them as they please" (Kohan 2003, 46). It is not hard to see that authors like Kohan share a positivist conception on natural science as an ideologically 'neutral' field: it does not matter if our political ideals are liberal, communist, or fascist, "in the natural sciences we all agree" (Kohan 2003, 30). Furthermore, we are expected to believe that such narrow-minded 'professional cretinism'[5] is Marx's position (see Kohan 2003, 46; Marcuse 1961, 137–138).

Kohan and his like forget that the natural sciences had been playing—and will continue to play—essential social, political, and ideological functions: "Darwin's natural selection, [for instance], was to be used in turn to justify ruthless exploitation and race subjection under the banner of the survival of the fittest" (Bernal 1969, 56). Neoliberalism worships the market as a quasi-biological order of competition,[6] ideologically reflected in the morality of 'laws of the jungle.'[7] This social (market) Darwinism appears as the *natural order* that guarantees efficiency and economic

5. I draw this term from Ilyenkov (2007, 52) and Mikhailov (2006, 23).

6. "In growing market competition small firms always face major threats from large companies as the latter possess more resources (physical, financial, human, and technological). Hence most smaller firms develop a cocooning attitude and confine themselves to a niche as they could not continue their struggle for existence in the marketplace." (Rajagopal 2015, 145–146)

7. "[T]he absence of human relations and solidarity […] is deliberately fostered in a society that proudly proclaims the laws of the jungle and the so-called survival of the fittest (read: wealthiest)." (Grant and Woods 2002, 5)

development, as some natural law before which there is no rational alternative.

Hence the relevance of Lenin's warning: "modern pseudoscience actually serves as a vehicle for the grossest and most infamous reactionary views" (1966, 234). Natural sciences do not exist in an innocuous bubble inhabited by impartial beings who indifferently observe the world from their ivory towers. Nobody can divest themselves of their ideals merely by entering a laboratory and assume them back on their way out, as the (positivist) Nestor Kohan (2005, 30) seems to believe. Natural science is a *social* activity. Even scientists of great talent quite often participate *with their science* in the most reactionary ideologies and practices. Indeed, not only in the social but also the natural sciences, the evaluative aspects of human activity are *internal* to theory. In acknowledging this internal nexus lies the core of Marxist conception on the relation between science and value (see Piedra Arencibia 2018).

To disregard natural science by favoring a supposedly exclusively social 'philosophy of praxis,' means to surrender to reactionary forces a crucial field of ideological struggle. This was summarised by Lenin as follows:

> […] it must be realised that no natural science and no materialism can hold its own in the struggle against the onslaught of bourgeois ideas and the restoration of the bourgeois world outlook unless it stands on a solid philosophical ground. (Lenin 1966, 233)

Such are the consequences of separating a supposed revolutionary philosophy from nature and the sciences that study it.

In the history of Marxism, there is a clear example of this which Soviet philosopher E.V. Ilyenkov thoroughly analyzed. At the beginning of the twentieth-century, in the context of the great discoveries taking place in physics, several Russian socialists uncritically accepted the predominant subjectivist interpretation about them. They thought that the workers' philosophy should be no longer Marx and Engels' materialist dialectics, but the idealist positivism professed by E. Mach:

> It was precisely as a result of an uncritical attitude toward what was said at the beginning of the century in the name of modern natural science and in the name of the 'new physics,' that Bogdanov and his philosophical friends fell into the most primitive subjective idealism. (Ilyenkov 2009, 374)

Plekhanov, the first Russian Marxist, proved that Machism was, in fact, Berkeley's doctrine presented in new terminology. However, Plekhanov proceeded using *purely philosophical* arguments. He did not realize that the

crux of the matter was that Machists legitimated their claims by entrenching themselves in the terrain of contemporary natural sciences. "And as long as they held on to this beachhead, no 'philosophical' argumentation had any effect upon them" (Ilyenkov 2009, 350). Hence, all of Plekhanov's arguments were easily disposed of by his rivals as antiquated 'Hegelian jargon.'

> The main deficiency in Plekhanov's position was that he ignored what was actually the central question raised by the Machists: the relationship of the philosophy of Marxism—dialectical materialism, materialist dialectics—to the events which had taken place in natural science, i.e., to the improvements which had been made in the logic of the thinking of natural scientists. This was the central point of the question, and only Lenin understood at that time the full significance of this fact for the philosophy of Marxism. (Ilyenkov 2009, 351–352)

Certainly, "we cannot *a priori* renounce a comprehensive understanding of the natural world" (Monal 1995, 10). Ever since, "each scientific judgment, when unraveling an aspect of objective reality, reproduces something that intimately and internally concerns man" (Rodríguez Ugidos 1985, 41). This is so not only—and not so much—because of humanity's interest in nature from an ideological point of view, but also—and mainly—from a *practical* one. The fact is that the natural sciences, through their practical applications, have provided humanity with great power over nature. (What was that famous line from *Spiderman*, again?) In Marx's words:

> [...] natural science has invaded and transformed human life all the more practically through the medium of Industry; and has prepared human emancipation, however directly and much it had to consummate dehumanization. Industry is the actual, historical relation of nature, and therefore of natural science, to man. (Marx 1988, 110)

To ignore this fundamental fact leads to a complete (idealist) failure to comprehend the *social* realm. An incomprehension especially unacceptable in our twenty-first-century, when natural sciences are more than ever an "immediate productive force" (Marx 1972, 143) that progressively and irreversibly penetrates, through technology, in our everyday life. Here lies the practical aspect of natural sciences' revenge upon those who separate "history from natural science and industry and sees the origin of history not in coarse material production on the earth but in vaporous clouds in the heavens" (Marx and Engels 1956, 201).

PHILOSOPHY'S (POSTHUMOUS) REVENGE

Interestingly, a fundamental idea of Engels was overlooked both by the majority of Soviet pro-Engelsian philosophy textbooks and his detractors in the West. Indeed, it is an idea "that Marxism itself has commonly avoided and even today provokes interpretations of all kinds, avoiding a literal reading" (Plá León 2009, 21). Nevertheless, such an idea appears in *each one* of the philosophical works of Engels (1976b, 131; 1987a, 35; 1976a, 362; 1987b, 486, 491). I am referring to the daring Engelsian thesis of the 'death' of philosophy: "if we deduce principles of being from what is, we need no philosophy for this purpose, but positive knowledge of the world and what happens in it" (Engels 1987a, 35).

Despite what may appear at first glance, this is not a positivistic renunciation of philosophy as such but an attempt to overcome *traditional* philosophy. Recall that, just like the first form of positivism (Comte's) and continental irrationalism (Kierkegaard, Schopenhauer, and Nietzsche), Marx and Engels reacted to the bankruptcy of German (idealist) highly speculative philosophy. Marx and Engels expressed their reaction by formulating (and answering) the question of what philosophy is.

A curious process has taken place in the history of thought. Each time philosophy tries to delimit its field to a sector of reality, each time it tries to possess an *object*, it suffocates like a fish out of water and is replaced by specialized science in that sector. Thus, when it comes to the movements of bodies, mechanics proves to be the far more adapted 'organism' in that environment, and rather like natural selection, it displaces the misfit philosophy. The same story is repeated over and over in all the natural and human fields; there is always a better adapted 'theoretical organism' that is up to the task philosophy struggles with. To change the figure, philosophy is like an exorcised ghost that has been thrown out of everywhere he tries to haunt.

Moreover, having failed to find a specific sector of reality to study, philosophy does no better by casting itself as "generalizing" or "systematizing" knowledge provided by other sciences, or by pretending to be a science of the 'world as a whole.' Engels understood this perfectly. Hence his insistence that 'particular' sciences should become consciously dialectical in their methods. For the natural sciences, themselves—not philosophy—need to conform to a unique (dialectical and materialist) worldview to frame their objects. What is then philosophy's element, its 'natural habitat'—so to speak? Engels' answer:

> In [any case], modern materialism is essentially dialectic, and no longer needs any philosophy standing above the other sciences. As soon as each special science is bound to make clear its position in the great totality of things and our knowledge of things, a special science dealing with this totality is superfluous. That which survives, independently, of all earlier philosophy is the science of thought and its laws—formal logic and dialectics. (Engels 1987a, 26)

It is, therefore, false that "one of the main characteristics of Engelsian philosophy [is] the postulation of a necessary dependence and subordination of philosophy [to] the natural sciences and the reduction of philosophical tasks to the narrow horizon of the generalization of their results" (Kohan 1998, 299). In his work on Feuerbach, Engels clearly states:

> To furnish this comprehensive view was formerly the task of so-called natural philosophy. […] today, when one needs to comprehend the results of natural scientific investigation only dialectically, that is, in the sense of their own interconnection, in order to arrive at a 'system of nature' sufficient for our time; when the dialectical character of this interconnection is forcing itself against their will even into the metaphysically trained minds of the natural scientists, today natural philosophy is finally disposed of. Every attempt at resurrecting it would be not only superfluous but a *step backwards*. (Engels 1976a, 365)

Philosophy is not anymore to speculate on nature or society because it "is no longer a question anywhere of inventing interconnections from out of our brains, but of discovering them in the facts" (Engels 1976a, 375). Does this mean that philosophy has nothing to do with the rest of (social and natural) science and that, like Ouroboros, has interest only in itself? Could it be that positive sciences are perfectly fine on their own and need no philosophy making a nuisance of itself? No. Philosophy does have a 'duty' towards the sciences, and its interest in them is essentially epistemological. Its object is thought, and not, by the way, the individual's thought—here lies its difference with psychology. Philosophy, understood as "theory of the laws of the thought process itself" (Engels 1976a, 365), as dialectical logic, does not deal with the thoughts of individuals, not even with that which all thinking individuals share, but concerns itself only with logically correct and cultivated thought, with thought as it *should be* when it adequately reflects its object, i.e., with *theoretical thought*.

In order to investigate any natural object (mechanical movement, biological inheritance, etc.), a social object (money, Christianity, the October Revolution, etc.), or an individual-psychological object (fear of spiders, shyness, etc.), we must convert it first into an object of thought. As far as theory goes, one cannot verify the correspondence of one's representation

of the thing with the very thing without first transforming the very thing into a representation (cf. Ilyenkov 2009, 8–9). A theory's elaboration consists of converting the object-thing into an idea, i.e., the idealization of the thing; the inverse process, i.e., converting the ideal object into (another) thing, is the process of thought's objectivization. In this spiral cycle of subjectivation-objectivization, the ideal-real cycle of human activity, philosophy finds its element: theoretical thinking, i.e., thought when reflecting its object's objective and internal regularities. The objective forms of thought that philosophy studies are, above all, the appropriation, through human practical and theoretical activity, of such objective regularities (that exist outside and independently of thought which seeks to reflect them). For that reason, being the products of our activity, thought's determinations are at the same time, in virtue of their content, independent of our will and consciousness. For "all logical forms without exception were universal forms of the development of reality outside thought, reflected in human consciousness and tested in the course of millennia of practice" (Ilyenkov 2009, 102). Hence, it is not about two autonomous 'substances' (thought and being) distinct one from the other, but "two sets of laws which are identical in substance, but differ in their expression" (Engels 1976a, 362).

Practical activity, the concrete-universal synthesis of the ideal and the material, systematically shows "the logical categories are not external forms of thought, but laws that govern the development of material and spiritual things" (Rodríguez Ugidos 1985, 72). That's why Engels (1976a, 345) claims that "the great basic question of all philosophy" lies not in the forms of thought nor the forms of being, by themselves, not either in the forms of thought *and* being, but in "the *relation* of thinking and being" (emphasis added). This does not mean, of course, that philosophy ought to become just a 'generalization' of scientific discoveries, but that philosophical categories are *simultaneously* objective and subjective. They are objective in virtue of their *content* (the real regularities that they allow to represent in theory and transform in practice) and subjective by their *form* (the specificity that they acquire as the reflection in the subject's activity through concepts, judgments, and reasonings).

In that way, philosophy is not a 'science of science' but "the logic of the development of a world outlook" (Ilyenkov 2009, 214). As a theory of theoretical thought, philosophy becomes necessary for the sciences, even though many scientists think of it as something completely expendable.

Such contempt was already common in Engels' times. With great acuteness, Engels (1987b, 345–355) shows how it was because of the deprecation of philosophy and theoretical thought, manifest in the aspiration to analyze 'pure' facts from no philosophical point of view, that scientists of the stature of A.R. Wallace and W. Crookes fell into the mysticism of modern spiritualism, i.e., in the most *unscientific* philosophy. Victims of empiricist and positivist illusions did not realize that, whether they know it or not, naturalists "may adopt whatever attitude they please, they are still under the domination of philosophy" (Engels 1987b, 491).

> Natural scientists believe that they free themselves from philosophy by ignoring it or abusing it. They cannot, however, make any headway without thought, and for thought they need thought determinations. But they take these categories unreflectingly from common consciousness [...] Hence they are no less in bondage to philosophy, but unfortunately in most cases to the worst philosophy, and those who abuse philosophy most are slaves to precisely the worst vulgarised relics of the worst philosophies. (Engels 1987b, 490–491)

In this way, "[p]hilosophy takes its revenge posthumously on natural science for the latter's having deserted it" (Engels 1987b, 486). The mere accumulation of empirical data is not enough to make a science. Once we extract those data, we need to do something with them, i.e., to elaborate a theory to conquer more than plain appearances. "[A]ll science would be superfluous if the outward appearance and the essence of things directly coincided" (Marx 2010b, 804). The very selection of which facts to be considered or left out already presupposes a preceding theory. Therefore, whether she wants it or not, the natural scientist must engage in theoretical thinking. However, it turns out that "theoretical thinking is an innate quality only as regards natural capacity. This capacity must be developed, improved, and for its improvement, there is as yet no other means than the study of previous philosophy" (Engels 1987b, 338). Not every scientist, regardless of how talented, is consequently cultured in philosophical matters. Hence, the Engelsian idea of the *spontaneous* 'dialectization' of natural sciences[8] requires of scientists an awareness of this spontaneous tendency

8. According to this idea of Engels, the discoveries of the natural sciences, despite the consciously adopted philosophical assumptions of their discoverers, tend little by little towards a dialectical conception, since this is imposed by the very characteristics of its object. "For the revolution which is being forced on theoretical natural science by the mere need to set in order the purely empirical discoveries, great masses of which have been piled up, is of such a kind that it must bring the dialectical character of natural processes more and more

through a conscientious study of dialectics "which rests on acquaintance with the history of thought and its achievements" (Engels 1987b, 491).

Only under this conception, philosophy no longer spreads its wings only with the falling of the dusk, i.e., after scientific discoveries have taken place; and becomes a conscious guide for the *development* of theories. This does not mean a subordination relationship between philosophy and the rest of the sciences but a necessary alliance, a fruitful collaboration to understand (and transform) this world.

NATURE'S REVENGE

The view that pretends to divorce Marxism from nature, moreover, prevents it from *theoretically* dealing with the ecological and environmental problems that have become a matter of grave concern in the last decades. Indeed, the topic of the dialectics of nature acquires today an immense significance, not only epistemological but also political and social, given the ecological crisis into which the capitalist mode of production has dragged us.

For the most part, the relationship between ecological thought and Marxism has not been cordial. As Hannah Holleman (2015, 1) asserts, "first stage eco-socialist thinkers often assumed Marx's work had no basis in ecological understanding, or believed his positions were Promethean and productivist—anti-ecological in the end." In general, this supposed 'Promethean' attitude in Marx is typified, according to L. Kołakowski (1978, 413), by "his lack of interest in the natural (as opposed to economic) conditions of human existence." Then, we are told that Marx grants to productive activity an infinite creative capacity, not limited or conditioned by nature. In reality, this accusation fits well with the (subjectivist) reading of Marx shared by many anti-Engelsian authors—among whom we can count Kołakowski himself—, especially concerning the concept of 'praxis' which, as I have demonstrated (Piedra Arencibia 2019, 83–102), is mystified by these Marxists who make out of it a supernatural creative force.

Truth be told, Marx and Engels are, to a large extent, heirs of the modern conception of humanity as "agent and interpreter" (Bacon 2003, 33) or "lord and master" (Descartes 1998, 142–143) of nature, mainly, due to their emphasis on labour and the primary role they grant to the productive

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to the consciousness even of those empiricists who are most opposed to it." (Engels 1987a, 13)

forces in history. Here we could cite the well-known passages from the *Communist Manifesto* where Marx and Engels celebrate the bourgeoisie achievement of the "[s]ubjection of Nature's forces to man" (1976, 113). Nonetheless, we should not forget that this 'celebration' is no more than their account of an undeniable historical *fact*. It is not in vain that for approximately two decades, several scientists (see, e.g., Crutzen and Brauch 2016) have used the term 'Anthropocene' to refer to our current geological epoch. Instead of the significant natural events (end of the last major ice age) that determined the transition from the Pleistocene to the Holocene, productive human activity is now the main force capable of changing the face of planet Earth.[9] Paraphrasing the *Manifesto*, probably not even Marx or Engels would have guessed, when they wrote it, that such mighty productive forces slumbered in the lap of social labour. Nevertheless, is vital to notice that the historical founders of Marxism turn away from the 'Promethean' trend that sees the human being as a sort of omnipotent God submitting nature at his will, when Engels states an important warning:

> [A]t every step we are reminded that we by no means rule over nature like a conqueror over a foreign people, like someone standing outside nature—but that we, with flesh, blood and brain, belong to nature, and exist in its midst, and that all our mastery of it consists in the fact that we have the advantage over all other creatures of being able to learn its laws and apply them correctly. (Engels 1987b, 461)[10]

The fundamental notion that a human being is an intrinsically natural subject and, therefore, entirely dependent on the rest of nature, runs throughout the whole work of Marx and Engels. As early as his *Economic and Philosophic Manuscripts of 1844*, Marx categorically asserts the following: "[t]hat man's physical and spiritual life is linked to nature means simply that nature is linked to itself, for man is a part of nature" (1988, 76). In *The German Ideology*, Marx and Engels declare,

> The first premise of all human history is, of course, the existence of living human individuals. Thus the first fact to be established is the physical organisation

9. It is worth noticing, as Carles Soriano (2020, 10) puts it, that "[t]he crisis of the Anthropocene has dramatically changed the Neokantian traditional break between the natural and social sciences. The Anthropocene, as a concept that results from the human interaction with the planet under an historical mode of social organization, above all reveals the inadequacy of the traditional dualist approach based on the separation of natural and social sciences."

10. "[The human being] opposes himself to Nature as one of her own forces." (Marx 2010a, 187)

> of these individuals and their consequent relation to the rest of nature. […] All historical writing must set out from these natural bases and their modification in the course of history through the action of men" (Marx and Engels 1998, 37).

They always had in mind that, regardless of how much technological power we possess, "man himself is a product of nature" (Engels 1987a, 34) whose fundamental activity, that which sets us apart from the rest of living creatures, i.e., labour, is at the same time a special kind of natural process. For labour "can work only as nature does, that is by changing the form of matter. Nay more, in this work of changing the form, he is constantly helped by natural forces" (Marx 2010a, 53). Labour, the central concept of classical Marxist thought, is defined by Marx as "a process in which both man and Nature participate, and in which man of his own accord starts, regulates, and controls the material reactions between himself and Nature" (Marx 2010a, 187). It is, therefore, "a necessary condition, independent of all forms of society, for the existence of the human race; it is an eternal nature imposed necessity, without which there can be no material exchanges between man and nature, and therefore no life" (Marx 2010a, 53).

For these reasons, the idea of communism as "the genuine resolution of the conflict between man and nature" (Marx 1988, 2), or, in other words, the ecological ideal of classical Marxism's notion of communism, should not be read in a Rousseau's style, as a *return* to a supposed 'natural state' or a *romantic* reunion with the 'Pachamama.' Indeed, Marx dislikes Rousseau and the illusions of a return to pre-industrial life (see Heinz Holz 2004, 85). This naturalist romanticism implies the non-Marxist notion that human beings have become something distinct from nature to which we must 'return.' First, according to Marx, "[t]he nature which comes to be in human history—the genesis of human society—is man's real nature; hence nature as it comes to be through industry, even though in an estranged form, is true anthropological nature" (1988, 110–111). Secondly, for Marx and Engels, "the celebrated 'unity of man with nature' has always existed in industry" (1998, 45). Finally, it is precisely this productive activity or 'industry' what "has prepared human emancipation" (Marx 1988, 110), for such an emancipation "is a historical and not a mental act, and it is brought about by historical conditions, the level of industry, commerce, agriculture, [and] intercourse" (Marx and Engels 1998, 44).

To deny the civilizing force of capitalism, due to an abstractly moral contempt for its—no less real—colonizing, predatory and bourgeois character, would be to bet on a merely local mode of production and a

primitivist idolatry of nature (see Marx 1972, 94). Furthermore, the 'solution' proposed by that naturalist sentimentalism consists of considering the human being as a sort of *excrement* (see Žižek 2012, 116) that 'mother nature' should expel from herself to regain her 'equilibrium'[11] and idyllic homeostasis that supposedly possessed before being profaned by the perverse civilized society.

> Those who really consider the political-ecological problems know that it is not about cultivating the longing for previous stages that are supposedly happier or more balanced. The hypothesis that the animals that we anthropocentrically call superior, like ourselves, owe their conditions of existence to contamination is enough to avoid any aesthetic or nostalgic approach: we breathe because in the current state of the planet, there is enough oxygen in the atmosphere, and that oxygen was pollution from the point of view (so to speak) of the algae and other organisms that perhaps produced it: those organisms breathed carbon [dioxide]. (Sacristán 1984, 39)

Far from conceiving the human being as an unhappy and expendable accident, a sort of bastard child of mother nature, Engels (1987b, 331–32), following Spinoza (2006, 49), understands spirit, i.e., the universal (social) thought that takes place through humanity as an attribute (inalienable property) of nature as a whole.[12]

The bottom line here is that human power will never surpass nature's, for the simple fact that the first is nothing more than a consciously oriented *application* of the second. Hence, nature will always exceed (defeat) man, whose final defeat—both as an individual and as a species—will be to pay the debt we all owe to nature: death. Through humanity, through our activity—yet, of course, not only through us—nature destroys and creates (i.e., transforms) itself. From an ecological point of view, this means that men will never be able to destroy nature in its entirety, but, for decades now, we can destroy *our* nature, i.e., the material basis that supports our existence as living beings and, to be fair, of all living things on this planet. The prominent eco-socialist John Bellamy Foster (2000, 165–167; Foster and Burkett 2016, 1–50) rescues and develops the Marxian concept of 'metabolic rift' referring to such a real and dangerous possibility of exhausting the natural basis for the continuity of our compulsory exchange

11. On a similar magical treatment of the 'balance' notion by the Machists, see the critique of Evald V. Ilyenkov 2009, 327–328.

12. Notice how clueless is Sartre's critique that "the dialectics of nature is nature without men" (1963a, 173).

of substances with nature; a rift that can only result in the final extinction of the human species.

Faced with this increasingly real threat, the Engelsian dialectics of nature acquires a renewed importance. The principle that not only the human subject but all nature is historical and active —i.e., that it produces new historical-concrete forms of self-development through the resolution of its internal contradictions—is crucial for correctly understanding the current ecological crisis. From the positivist interpretation of nature, secretly shared by Engels' critics,[13] the natural world is a chaos without any history and inner structure, an amorphous and passive (deprived of self-negation) substratum waiting to be shaped by language (as in some neopositivists) or by miraculous human 'praxis.'[14] Indeed, this is the ontological picture that lies under the technocratic 'Prometheanism.' According to Engels, instead, nature is also active and therefore capable of counterattacking, or in his terms, taking its 'revenge.' Therefore, after highlighting labour as the teleologically oriented material activity that allows man to effectively control natural forces as its essential feature, Engels warns us:

> Let us not, however, flatter ourselves overmuch on account of our human victories over nature. For each such victory, nature takes its revenge on us. Each victory, it is true, in the first place brings about the results we expected, but in the second and third places it has quite different, unforeseen effects which only too often cancel the first. (Engels 1987b, 460–461)

This profound and visionary idea of Engels follows directly from the natural-dialectical principles of his worldview. Firstly, as we have seen, he starts from the conception of nature as an active and historical reality. Secondly, Engels acknowledges the part played by chance in dialectical interactions and transformations (of cause-effect relations) in natural phenomena. As Barbagallo (2005, 99) has pointed out, such a dialectical view, in which all organisms and natural conditions are mutually dependent, in which causes transform themselves into effects and vice versa , is crucial

13. Sartre, who thinks that "it is through human reality that there is a world" (1993, 307), believes that nature or—using his jargon—'being-in-itself' "can not even be what it is not; we have seen indeed that it can encompass no negation. It is full positivity. It knows no otherness; it never posits itself as other-than-another-being. It can support no connection with the other. It is itself indefinitely and it exhausts itself in being. From this point of view we shall see later that it is not subject to temporality." (1963a, xvi). Thus, according to this metaphysical idealism only consciousness is temporal, time (let alone historical change) does not exist in nature.
14. "Nature for itself is devoid of any negativity. Negativity only emerges in nature with the working Subject." (Schmidt 1971, 195)

for the very concept of ecosystem (see also, Foster 2020, ch. 6). Furthermore, because nature is capable of producing the new, the qualitative diverse, it can *surprise us*.

In his famous paper, *The Part Played by Labour in the Transition from Ape to Man*, Engels notices that our scientific discoveries and technological achievements have not only natural but also unforeseen *social* consequences. The latter are, in fact, much more difficult to predict and can acquire dramatic dimensions. Thus, "afterward Columbus discovered America, he did not know that by doing so he was giving a new lease of life to slavery, which in Europe had long ago been done away with, and laying the basis for the Negro slave trade" (Engels 1987b, 462).

The Marxist biologists Richard Levins and Richard Lewontin (2007, 106, 149, 182, 298) observed how failure to understand this dialectical character of nature lead the pharmaceutical-medical establishment fifty years ago, confident after the initial success of antibiotics, to the illusion that infectious diseases would have disappeared forever by now. However, today not only are we witnessing how old pathogens become more resistant which each generation of antibiotics, but even how new diseases emerge despite—and sometimes even because of—their extensive usage. Sure enough, pharmaceutical companies within the capitalist mode of production, in their frenzy for short-term profit, cannot afford to acknowledge such a dialectical picture that considers not only the immediate effects of our acts but tries to disclose the mediate repercussions and dialectical cause-effect links.

The Marxist analysis of these matters reveals the ideological dimension and the class character of the philosophical assumptions that consciously or unconsciously guide our activity. Thus, the positivist (i.e., reductionist, mechanicist, and subjectivist) view of reality and the method of its study—usually despite the intentions of its users—turn into strong allies for capitalist practices in its logic and guide for action. Something similar, but on a conscious level, happens with materialist dialectics for those who fight for the practical emancipation of man and nature, for communism.

> As one battles it out over any environmental problem, it becomes clear that the left demands a deeper understanding of the whole system, while the right wants the problem to be reduced to technical details. So the dialectical proposition—that the world is richly interconnected and that it must be seen as a systemic whole with contradictory aspects—becomes a hot political problem rather than a simple topic of debate in philosophical seminars. (Levins 2016, 158)

Henceforth, perhaps the greatest perspicacity of Engels' treatment of this issue lies in his awareness of the political (class) aspect of the ecological problem. The concrete character of his approach to this problem places at the center of critical attention, not the generically abstract 'human being,' but a historical-specific mode of production, i.e., capitalism. This mode of production not only implies a concrete-historical form of human (inter)relations but also, and simultaneously, a peculiar mode of relating to the rest of nature. Engels highlights the (harmful) ecological implications of the chaotic and spontaneous character of capitalism:

> As individual capitalists are engaged in production and exchange for the sake of the immediate profit, only the nearest, most immediate results must first be taken into account. […] The same thing applies to the natural effects of the same actions. What cared the Spanish planters in Cuba, who burned down the forest on the slopes of the mountains and obtained from the ashes sufficient fertilizer for *one* generation of very highly profitable coffee trees—what cared they that the heavy tropical rainfall afterwards washed away the unprotected upper stratum of the soil, leaving behind only the bare rock! (Engels 1987b, 463)

This lucid approach to the ecological problem, from a class struggle standpoint and not as an affair related with a supposed (greedy) 'human nature,' is what makes classical Marxism a fundamental theoretical precedent for current eco-socialist conceptions, such as that of Jason W. Moore (2015) who confronts the aforementioned concept of Anthropocene as part of an ideological diversionist strategy that tries to blame 'humanity' as a whole for all the problems caused by 1% of its population. Moore (2015, 173–196), therefore, proposes the concept of Capitalocene, as it is not the human being but capital, the actual agent responsible for the uncontrolled environmental effects that we have been witnessing. Capital, not man, has become the principal geological force. "Like Frankenstein's monster, capital is a human creation, which comes to dominate its makers. As our environment becomes more habitable for capital, it becomes less habitable for the human" (Levant 2017, 259).

THE REVENGE (IRONY) OF HISTORY

Indeed, the capitalist mode of production prevents us from fully deploying our (distinctive) rational ability to foresee and control the mediate effects of our actions. According to Engels, human history essentially differs from the history of nature in the fact that, in the latter:

> [...] unconscious agencies [act] upon one another, out of whose interplay the general law comes into operation. Nothing of all that happens [...] as a consciously desired aim. In the history of society, on the contrary, the actors are all endowed with consciousness, are men acting with deliberation or passion, working towards definite goals; nothing happens without a conscious purpose, without an intended aim. (Engels 1976a, 365)

Nonetheless, it turns out that, still today, the historical outcomes of their actions often differ quite dramatically from the intended purposes of men. Here lies the well-known Marxist theme of 'alienation,' i.e., the fundamental ontological paradox of modern times: it has never been clearer that *human* history is the product of our activity, and, at the same time, it is clearer than ever that it is not us (human beings) who are controlling it. Man loses control over his own activity and its objects and finds himself under the control of one of his products, capital, an *extraneous and hostile* force that subjugates him.

It cannot be highlighted enough: 'alienation' is an *objective* domination relation and not just an illusion or mirage that we can dispel with a sort of moral self-nurturing or by arriving at some intellectual mind-changing illumination based on our goodwill to 'change the world without taking power' (cf. Holloway 2005). The conquest of the control over our social activity and its products, of the control over our lives and human history—as we have learned from Marx and Engels already—demands a real liberation, not just a mental one. Furthermore, such liberation requires a scientific understanding of the object from whose control we are trying to free ourselves, capital, *and* the necessary object of our practical activity, nature, serving as a guide for *correct* interventions in the course of history: knowledge (science) in unity with action (revolution), or revolutionary practice-oriented by revolutionary theory. As Engels put it:

> [the regulation and effective control of the mediate effects of our activity], requires something more than mere knowledge. It requires a complete revolution in our hitherto existing mode of production, and simultaneously a revolution in our whole contemporary social order. (Engels 1987b, 462)

Those who try to separate revolutionary practice from science are, therefore, subject to what Engels (and Marx) called the 'irony of history:' "[t]hey will pay for the consequences of their own [absurd] actions—that is the law of history" (Engels 2001, 282). This is particularly true of the 'free praxis' creed that transforms the profound Marxist notion of revolutionary practice into a narrowly political revolt. These authors usually

reject the 'determinist' objective laws of history while claiming that Marxists are perfectly fine just with a political theory that dissipates the illusions of capitalism over the masses and presenting their *voluntarist* reading of Marxism as a supposedly radical "political theory of rebellion" (see, e.g., Kohan 1998, 78–79). This 'revolutionary' stance of 'political revolt' and the purely negative 'scream' of the oppressed that has nothing *positive* to tell us (i.e., discontented haters without concrete solutions, destroyers of the present while reckless of the future),[15] often end up reinforcing that very order of things that oppresses them. As Engels puts it: "[m]en who have boasted of having *effected* a revolution have always found on the morrow that they didn't know what they were doing; that once *effected*, the revolution has borne no resemblance at all to what they had intended. That is what Hegel calls the irony of history, an irony which few historical figures can escape" (Engels 1995, 281).

We could grant that such theories of 'rebellion' are made with good intentions, but so is the road to hell, as the saying goes. Let us illustrate this by using an example from the 'Marxist' Jean-Paul Sartre. A black worker of an airport in a racist country steals a plane as a protest against the "subjective impoverishment" (J.-P. Sartre 1963b, 95) that represents the prohibition against flying because of the color of his skin. With no experience as a pilot, he crashes and dies (most likely, killing quite a few innocent people in the process). Sartre sees in this "individual revolt of the 'airplane thief' […] a particularization of the collective revolt of the colonized; at the same time, it is in addition, by its very incarnation, an emancipating act" (ibid., 109). How this "choice of a brief, dazzling freedom, of a freedom to die" (ibid.) that—as Sartre himself acknowledges—reflects the actual (*frustrated*) state of the colonized people's rebellion, can be evaluated as an 'emancipatory act' is beyond my modest understanding. What is clear is that these *abstract* acts offer a valuable service to the oppressors. Would not such an 'emancipatory act' be the perfect justification and legitimization for the very injustice against it tried to protest? And what we could say about the (kind of pathetic) method of combating capitalism proposed by Holloway (2005, 188): the 'revolt' of "throwing the alarm clock at the wall, arriving late for 'work,' back pain and other forms

15. "Our scream is a refusal to accept. […] A refusal to accept the inevitability of increasing inequality, misery, exploitation and violence. […] Our scream is a scream to break windows, a refusal to be contained, an overflowing, a going beyond the pale, beyond the bounds of polite society. […] Our refusal to accept tells us nothing of the future, nor does it depend for its validity on any particular outcome." (Holloway 2005, iv)

of absenteeism […]." Perhaps our 'screamer' does not know—or pretends not knowing, it does not matter—that the worker cannot *afford* to be fired and that, if he goes to work early, it is not because of deception over his subjectivity or an arbitrary sadomasochistic choice, but because he *objectively* depends on his salary to live. In practice, this lame 'rebellion' would only discover that workers *as individuals* are expendable for capital: for each one fired, there will always be ten more looking (competing) to fill the position. Such is the revenge that history takes on those who act without knowledge of the object.

> This transformation into the opposite, this ultimate arrival at a point which represents the diametrical opposite of the point of departure, is the naturally ordained fate of all historical movements that are unaware of the reasons for and conditions of their existence and thus merely geared to illusory aims. They are mercilessly brought into line by the 'irony of history.' (Engels 1990, 21)

Abstract freedom turns out to be concrete slavery. Real (concrete) freedom "means nothing but the capacity to make decisions with knowledge of the subject" (Engels 1987a, 105). Such is the simple and yet profound Engels' dialectics of freedom and necessity.

CONCLUSION

Under the capitalist mode of production, that is, under "a system of production which has grown up spontaneously and continues to grow behind the backs of the producers" (Marx 2010a, 116), human beings still lie in their 'natural prehistory,' for what distinguishes them from the rest of animals is their capacity to plan and control their productive activity. Hence, Marx and Engels saw communism as the appearance of man as the protagonist of his own history, as history's true *humanization*, as the transformation of man from a subjected *actor* into a subject of his actions, an *author*. In Engels' (1987b, 462) words: "All hitherto existing modes of production have aimed merely at achieving the most immediately and directly useful effect of labour."

> Only conscious organisation of social production, in which production and distribution are carried on in a planned way, can lift mankind above the rest of the animal world as regards the social aspect, in the same way that production, in general, has done this for mankind in the specifically biological aspect. Historical development makes such an organisation daily more indispensable, but also with every day more possible. From it will date a new epoch of history, in which mankind itself, and with mankind, all branches of its activity, and particularly

> natural science, will experience an advance that will put everything preceding in the deepest shade. (Engels 1987b, 331)

Therefore, this conscious and intelligent form of organizing human social life, in which those "extraneous objective forces that have hitherto governed history pass under the control of man himself," is regarded by Engels as "the humanity's leap from the kingdom of necessity to the kingdom of freedom" (Engels 1987a, 270). That is why the ecological problem demands not only a 'mindset change' or a 'new paradigm,' but a practical historical revolution based on the scientific knowledge of (social *and* natural) reality, in order to surpass that mode of production that "while upsetting the naturally grown conditions for the maintenance of that circulation of matter, it imperiously calls for its restoration as a system, as a regulating law of social production, and under a form appropriate to the full development of the human race" (Marx 2010a, 507). Indeed, this is a life-or-death challenge. Communism, "the reconciliation of mankind with nature and with itself" (Engels 1975, 424), the "fully-developed naturalism, equals humanism, and as fully developed humanism equals naturalism" (Marx 1988, 102), the rational form of relating with nature and with itself that humanity can and must construct, is, therefore, *not* an automatic and inevitable result of some laws of nature's development, but an absolute condition for the survival of all human beings that live in it. Let us fight for that this geological epoch turns out to be the only one with a future for humanity, not Capitalocene but 'Communocene.'

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