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FOR A CULTURE OF LIMITS: ECOLOGY, POLITICS, AND SOCIETY BEYOND THE EXTRACTIVIST MODEL

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Abstract

This essay critiques the narrow public focus on climate change, repositioning it as one of nine interconnected planetary crises. It argues the true driver of this systemic breakdown—from biodiversity loss to chemical pollution—is the dominant socio-economic model, which is extractivist and reliant on infinite growth. Adopting a political ecology framework, the paper contends that environmental degradation is not neutral but a political act that creates "winners and losers." Through case studies like Taranto and the Congo, it exposes the deep environmental injustices and socio-environmental conflicts inherent in this system. The analysis highlights the "metabolic rift" and the logic of "discard" , which devalues both nature and human beings. The essay concludes by calling for a fundamental shift towards a new "culture of limits" that redefines progress and well-being.

Keywords

Biodiversity, Political Ecology, Extractivist Model, Environmental Justice

1. *We shouldn't just focus on climate change*

Within public discourse, climate change is often framed as the preeminent, impending threat, demanding that all efforts be concentrated on its mitigation. In reality, it represents only one dimension of the current environmental crisis, which must be understood in its full complexity to accurately perceive its scope and formulate effective decisions to address it.

Leading scholarship indicates that a series of interconnected crises are pushing the planet toward destruction (Rockström, Steffen, Noone et al., 2009). It is possible to enumerate at least nine dimensions that require adequate interventions, since if these warning thresholds are crossed, the likelihood of significant repercussions for planetary well-being, and therefore for human well-being, is very high (Steffen Richardson, Rockström et al. 2015).

We are witnessing a mass extinction of living species, which is the direct consequence of the destruction or degradation of an ever-increasing number of ecosystems, causing them to lose their ability to provide essential "services" (for example, water purification or pollination). The reduction in biodiversity also results in a decrease in the capacity of natural habitats to store carbon (Kolbert 2014; IPBES 2019).

Chemical and plastic pollution. The release of microplastics, pesticides, heavy metals, and other pollutants into the environment poses a threat to animal and plant health, as well as human well-being. Since the 1960s, some have warned about chemicals in agriculture, highlighting their impact on ecosystems (Carson 1962).

Alteration of the nitrogen and phosphorus cycles. The use of nitrogen and phosphate fertilizers in agriculture has led to an increase in these components in water bodies, resulting in eutrophication. This process leads to an increased presence of algae that alters ecosystemic balances, causing the death of aquatic life in rivers, lakes, and even the sea (Carpenter 1998).

Land consumption. The tendency to reduce forest cover to make way for agricultural crops, as well as the ever-increasing construction of buildings, leads to the destruction of ecosystems and increases carbon dioxide emissions (IPCC 2019; ISPRA 2019; EEA 2018).

Ocean acidification. Human activities, which cause an increase in carbon dioxide emissions, lead to a lowering of the pH of ocean water. This increased acidity endangers the life of corals, mollusks, and plankton, which are at the base of the marine food chain, and therefore all marine life (Feely, Doney & Cooley 2009; Kroeker, Kordas,

Crim & Singh 2010; Orr, Fabry, Aumont, Bopp, Doney, Feely, & Yool, A. 2005).

Water stress. Freshwater is becoming an increasingly scarce commodity. Aquifers are overexploited to ensure irrigation for agricultural production and for various human activities (FAO 2021).

This interconnection leads to paradoxes: one can attempt to intervene to address an identified critical issue, but one can unwittingly end up worsening other parameters. Intervention should therefore be systemic, identifying the driving force behind the multiplicity of crises we have listed and working to defuse it.

The driving force behind this is the current socioeconomic model that underpins the organization of human life on Earth. It is extractive in nature and based on the unrealistic idea of infinite growth, whereas the planet has precise limits, beyond which human life is endangered. The identification of this driver of our current crises is not new; it dates back to the famous Club of Rome report (Meadows, Meadows, Randers & Behrens III 1972). However, the increasingly evident extent of the capitalist production model's impact on the planet has led to significant further analysis (Moore 2016).

2. *Ecology is politics*

The environment, therefore, is not a neutral context—almost like a stage—in which human action unfolds, but rather the result of humanity's metabolic exchange with nature and social relations. Human society draws material and energy from nature to satisfy its needs, consequently producing waste. An agricultural landscape is the result of this metabolism, as is a city. The environment in which we live is the result of the relationship we have established with nature over the centuries, interacting profoundly with ecosystems, which have reorganized themselves as a result of this relationship. But our relationship with nature is mediated by social relations, which dictate how that metabolism occurs and what consequences it has for certain groups of people. Who gains and who loses from the processes of nature's transformation. In the capitalist model, human exploitation of nature proves functional to the exploitation of man by man, and some Marxian insights can certainly be reinterpreted in this direction (Moore 2015; Foster 2000).

These considerations are the basis of political ecology, which establishes a fundamental principle: humans produce changes in the environment that impact society, determining who is able to produce those changes, who benefits from those changes, and who instead pays a higher or lower price. (Bryant & Bailey 1997; Blaikie, P. & Brookfield 1987).

When the steel industry was established in Taranto, the decision was made—certainly not by the residents, but by politicians and industry—with far-reaching implications for the city (Romeo 2019). This had an impact on the city's social composition, leading to the reconversion of former farmers or fishermen into workers, or attracting people in need of work from various parts of Southern Italy (Leogrande 2013). The greatest advantages benefited the automotive and manufacturing industries of Northern Italy, which could count on domestic steel production and, following privatization, on shareholders who entered the business. Most of the disadvantages occurred at the local level.

The resulting pollution made agriculture and mussel farming impracticable, and the water that had been a source of sustenance for generations of farmers and fishermen for centuries became an industrial dump site. In the longer term, it was discovered that the entire city was forced to pay the price of "modernization," in terms of a higher incidence of pulmonary diseases, cancers, and autoimmune disorders, and that the entire city would have to contend with the problem of remediation. Today, therefore, a conflict of interests looms between the workers' need for work and the citizens' demands for health, a conflict that is being laboriously reconciled, amidst many contradictions. This conflict can be defined as socio-environmental. Taranto vividly illustrates the clash between economic interests and fundamental rights to life (Mello 2014). It illustrates the drama of a city held hostage by a double bind: it depends on work that, at the same time, poisons it. As Bateson (1976) told us, in these cases there is no freedom, but rather a paralyzing stalemate. Adopting the theoretical perspective of André Gorz (2005), one would say that to resolve a crisis like the one in Taranto, we must convince ourselves to transcend the presumed "economic rationality," posing the question in terms of a more human-scale rationality, capable of identifying people's real interests, freeing them from the

blackmail to which the capitalist development model inevitably leads (Barca & Leonardi 2018).

Political ecology teaches us that environmental issues must be interpreted in terms of environmental justice (Bryant & Bailey 1997). Environmental degradation impacts social groups unequally: costs and benefits are not equally shared, making resource exploitation potentially a source of conflict. The environment emerges as a political battleground, probably the most significant today. Many examples can be cited. Certainly, the most emblematic of environmental injustice at the international level is the case of Congo. The global economy is supported by the brutal exploitation of an entire nation's resources and the systematic degradation of its natural environment. Open-pit mines are the result of decisions made by external actors, multinationals (Chinese, American, Canadian) driving the digital transition of the economy, which relies on coltan and so-called "rare earths" (Kara 2023).

They acquire the power to exploit Congo's soil thanks to the convergent interests of corrupt elites or warlords (Nest 2011), who present themselves as global power brokers. The advantages achieved by these exploiters are enormous; the disadvantages are for the population, who offer their labor for a few dollars a day, who see the environment irreparably degraded, and who are no longer able to use their own water resources for food, as poisonous waste is discharged into lakes and rivers. Agriculture and fishing become unviable. Those who dedicated themselves to these activities are forced to emigrate or swell the ranks of mine workers.

Here too, a double bind is created: millions of people, many of them children, work in artisanal mines, digging with their bare hands and handling toxic minerals without any precautions, for paltry earnings. For them, work is a non-negotiable necessity; they become agents of the destruction of their living environment. Even realizing it, they cannot help but act as they do; they are elements of the productive apparatus (Geenen 2015). They are, ultimately, victims of a renewed form of colonialism. Oiling the machine are global consumers, who enjoy the advantage of affordable electronic devices, made possible by human and environmental exploitation. The lifestyle of the West, and now also of China, is made possible by the systematic exploitation of environmental and human resources and the environmental degradation of another part of the world, which, despite having all the potential to be rich, is actually among the poorest countries on the planet. It is clear that the ecological question in Congo is a geopolitical one. It concerns the functioning of capitalism globally. Its solution calls for a profound rethinking of the ways we produce. This is the clearest proof that ecology is political. Any decision or intervention that modifies the environment ends up creating winners and losers, so it makes no sense to address the ecological impact of environmental transformations without addressing the resulting inequalities. Even an intervention that has a positive ecological impact, such as the creation of a park, can have negative social impacts, for example by depriving a group or community of the possibility of exploiting natural resources (Dowie 2011). We cannot pretend this social problem does not exist; it must be addressed and resolved (Bullard 1990).

3. *Metabolic breakdown and waste production*

The current production model, based on an altered metabolic cycle that disrupts the sustainability of traditional societies' production cycles (Foster 2000), fundamentally operates according to a logic of squandering, applied both to environmental resources and to people (Bauman 2005). This squandering inevitably implies waste (refuse), that is, a cumbersome, unusable residue—in short, a problem. It reveals the nihilistic essence of our socio-economic functioning: production and consumption, by failing to recognize values to which they should submit, become self-referential, forgetting the existence of limits (Georgescu-Roegen 1998). Bateson has emphasized how connected the sense of the sacred and ecology are (Bateson 1979) and how ignoring ecological issues means ignoring our close connection with the environment: we are both the cause and the caused; we are in a complex system of relationships, and opting out means adopting a self-destructive attitude.

Production, driven to feed itself, and consumption, driven to grow upon itself, are inspired by the principle of rapid obsolescence, of destructive innovation that takes no account of the physical limits of the planet and the social costs it entails. Serge Latouche points out that the need for limitless production not only overexploits resources but also implies the need to continually stimulate consumption, directing it toward new needs**; this, in turn,** translates into the

production of a growing amount of waste and forms of serious social injustice (Latouche 2007). While approximately 40% of the food produced globally is lost—(which is also waste) representing an economic value of over $1 trillion and causing a 10% increase in greenhouse gas emissions—733 million people are more or less severely malnourished (FAO 2021; UNEP 2024).

That innovation (with all that it entails) has been placed at the foundation of the social, economic, and cultural functioning of our lives is attested by this year's Nobel Prize in Economics, awarded to Joel Mokyr, Philippe Aghion, and Peter Howitt for demonstrating how innovation-driven economic growth works (Aghion 2021; Mokyr 2018). Critics of the system have emphasized the political-ideological nature of this award. The prize, it has been said, demonstrates how, in the current historical phase, technological innovation is a politically sensitive, geopolitical issue: the global power structure, until now based on Western hegemony, is shifting in favor of China by virtue of its investments in technological innovation. A tough, no-holds-barred confrontation between the great powers is looming precisely on this level. To put it more explicitly, rather than an award for the authors' scientific merit, this year's Nobel Prize was "an exhortation to the masses to accept the challenge with the hardships, risks, and discomforts it entails" (Masala 2025). For those critical of the current socioeconomic system, it is a reaffirmation of the validity of capitalism in its current form, a prize for orthodoxy. The Nobel's subtext would be: "the only acceptable and possible world seems to be one where nations, businesses, and individuals fight furiously, and without holds barred, for technological hegemony that becomes economic and political hegemony and thus, ultimately, domination over the defeated. A world that therefore sees oppression as the only possible horizon. The only acceptable 'sense'" (Masala 2025).

The dynamics of global capitalism, by its very nature, are destined to operate according to a logic of continuous overcoming of limits, which means that something supposedly more efficient, newer, and more effective is destined to relegate what was once a resource to waste. This applies to things and to people. We are continually displaced by the demands of the productive world, which declares the skills we have acquired and practiced useless, inviting us to continually acquire new ones (this is the ultimate meaning of lifelong - lifewide learning). We are called to surpass ourselves so as not to be declared superfluous. This is a mechanism that generates a high level of anxiety, precariousness of existence, and competition among individuals to secure social status and maintain access to resources. A continuous effort is made to avoid falling back into the "waste" category (Sennett 2000).

Caught in this system, there is no room for solidarity, those who lose do so because they were unable to keep up, did not try hard enough. The meritocratic ideology serves to make the idea that there is waste acceptable, while at the same time offering those who are struggling strenuously to stay in the game emotional gratification for their current condition and reasons for contempt for the less fortunate (Sandel 2021).

This devaluation of so much of humanity is justified by an exclusively instrumental, efficiency-driven rationality, measured by a limited number of variables, whereas we live enmeshed within immeasurable relationships that interconnect everything with everything else. Thus, capital, moving where labor costs are lowest and where the possibility of "wild" exploitation of resources is easier, leads, on the one hand, to the deindustrialization of previously labor-intensive areas, with increased unemployment. On the other hand, it causes environmental degradation in the places where production is relocated, and this generates waste upon waste. It is well known that globalization causes migratory flows, but we simply attempt to contain them downstream. The state shifts from being inclusive to being security-oriented: migrants and refugees become the figures toward whom the frustration, insecurity, and anger of those living in precarious conditions are directed (Harvey 2005).

This pathologically growing system is a source of profound individual distress, which translates into anxiety and depression, but the system also seeks to accommodate these dysfunctions within its economic operations: the pharmaceutical industry increases the supply of psychotropic drugs, the cultural industry offers entertainment, social media captures individuals in empty forms of relationality, mafias commercialize the most diverse forms of drugs. There is no aspect of life that sooner or later is not transformed into a commodity.

Everything becomes available for consumption in exchange for a price to someone who has

appropriated the possibility of turning it into a fungible service (Fisher 2018).

We need new models of thought and action that can take complexity into account and aspire to a form of new humanism—as Morin (1994) suggested—that includes the environment in its valorization of humanity. But above all, models that understand the need for limits, restoring new meaning to the notions of progress and well-being.

The historical task we face is the reconstruction of a culture of limits and constraints, which makes us understand how intrinsically our destiny is linked to that of all life forms that populate the planet.

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