

Is Posthumanist International Relations a New Hope for Global Ecological Politics? A Critical Realist Response

Yelda Erçandırılı

Associate Professor, Department of International Relations, Osmaniye Korkut Ata University, Osmaniye

E-Mail: yelda.ercandirli@gmail.com

Orcid: 0000-0002-8803-5368

Abstract

This paper addresses the question, “Is posthumanism a new hope for global ecological politics?” by examining the structure–agent problem from a critical realist perspective. Despite its theoretical contributions in rejecting dualism and advancing a non-anthropocentric ontology of the nature–human relationship, I argue that posthumanism, grounded in an ontology that excludes the historical and social structures underlying ecological destruction, offers only a limited imagination for global ecological politics and weakens the transformative capacity of social and ecological emancipation. Within this critical realist starting point, I return to historical materialism (HM), which conceptualizes social and ecological processes on the basis of historically constituted relations of production and material conditions. Against reductionist interpretations of HM, I position critical realism (CR) as a meta-theoretical framework. A CR-informed HM posits ontologically distinct causal mechanisms in the structure–agency relation: agents act within the possibilities and constraints of these structures but, through praxis, contribute to their reproduction or transformation. Posthumanism, by contrast, orients global ecological politics not toward transformative praxis but toward a framework centred on adaptation and ethics.

Keywords: Structure, Agency, Anthropocentrism, Materialism, Ecological Destruction

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Introduction

Deepening ecological destruction is regarded as the most comprehensive and irreversible crisis confronting human societies. Since the United Nations (UN) Conference on the Human Environment in Stockholm in 1972, the past half-century has been a period in which ecological problems have occupied the very centre of global politics. Yet during this time, the annual climate summits organized under the auspices of the UN —most prominently the Conference of the Parties (COP) process—and the recent proliferation of “green new deal” and “green transition” initiatives have not rendered the crisis more manageable; rather, they have generated a discursive framework that adapts it to the logic of accumulation within the capitalist state system. The 2015 Paris Climate Agreement and similar forms of “greenwashing” have

revealed that global environmental politics has failed to transcend this structural orientation that privileges unequal accumulation.¹

In this context, more radical theoretical engagements with global ecological politics have become increasingly visible within the International Relations (IR) literature; in particular, posthumanist interventions have emerged as a challenge to anthropocentric ontologies and state-centred explanatory frameworks (Schmidt 2012; Cudworth and Hobden 2011; 2018). Shaped in conjunction with new materialist debates, these interventions seek to rethink global ecological politics through the lens of planetary ontology and relational materiality. Drawing on concepts such as co-constitutive relations, contingency, complexity, and systems, they treat non-human materiality and planetary processes as constitutive conditions of explanation rather than as passive or secondary elements (Cudworth and Hobden 2011; 2018; Burke et al. 2016; Chandler et al. 2018).² Posthumanism insists that the interactions between human and non-human systems must be understood in terms of intra-action, entanglement, and multispecies ethics; thereby, it rejects the dichotomy between nature and humanity and advances a post-anthropocentric conception of material reality (Meiches 2023).

In this study, I question whether posthumanist IR carries any promise for global ecological politics within the framework of the structure–agent debate. As Colin Wight (2006) notes, the structure–agent problem is fundamentally ontological and holds significance both for identifying who or what can be considered an agent (individuals, states, or nature) and for explaining how structures (such as international norms, capitalism, and the state system) change. The structure–agency debate concerns the nature of causality in socio-ecological explanation and, in doing so, helps specify what different theories can—and cannot—offer as accounts of socio-ecological transformation.

Posthumanist and new materialist approaches ground knowledge production in an “onto-epistemological” claim that resists reducing knowledge to representationalism; explanation is tied instead to the constitution of practices through which knowing and being are entangled (intra-action) (Barad 2007). In critical realism (CR), by contrast, explanation rests on identifying and justifying the generative mechanisms that produce events and the

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- 1 The Paris Agreement establishes a climate governance framework based on nationally determined contributions (NDCs) rather than supranationally imposed binding emission reductions (UNFCCC 2015). This framework facilitates market-compatible climate policy instruments, often theorised as forms of “climate capitalism” compatible with prevailing dynamics of capital accumulation (Newell and Paterson 2010). In this article, “greenwashing” refers to cases in which actors or initiatives with limited environmental performance construct a more favourable environmental image through selective or misleading environmental claims and communication strategies (Delmas and Burbano 2011).
 - 2 Posthumanism and new materialism are best understood not as separate intellectual domains but as intersecting orientations in their critique of anthropocentric ontology (Lundborg and Vaughan-Williams 2015). Whereas posthumanism foregrounds the ethical and political reconfiguration of the subject, new materialism theorizes its ontological condition of possibility: the vitality and immanent agency of matter (Bennett 2010; Coole and Frost 2010; Braidotti 2013). In IR, posthumanism often follows a trajectory that overlaps with new materialist ontology, as reflected in Lundborg and Vaughan-Williams’s (2015) emphasis on “new materialisms” and in Cudworth and Hobden’s (2015) analyses of ecological destruction. Accordingly, this study centres on posthumanism while examining its conceptual coherence in light of its ontological grounding in new materialist thought.

conditions under which those mechanisms are activated (Bhaskar 1979). This epistemological distinction has clear implications for the structure–agency debate, separating accounts that locate transformation primarily in ethical and relational reorientation from those that ground transformation in the constitution of collective praxis within specific forms of structural conditioning (Archer 1995).

The theoretical position I adopt in this debate is Historical Materialism (HM), which conceptualizes social and ecological processes on the basis of historically constituted relations of production and material conditions. Yet HM itself contains diverging orientations (Joseph 2002). As Bhaskar (1979) argued, the structural configurations of socio-ecological reality operate on a stratified ontological plane in which structures carry causal powers that condition agency but are irreducible to it. Margaret Archer's (1995) morphogenetic approach demonstrates how this ontological distinction functions historically—structures and agency interact through temporally sequenced processes of conditioning, transformation, and reproduction. For Archer (2003: 2), drawing the distinction between structure and agency correctly is the only way to explain how (and whether) the social world changes.

In this respect, CR provides HM with both causal depth and ontological coherence. The stratified ontology of CR recognizes that socio-ecological reality operates not only at the level of observable events but also at the level of underlying structures and tendencies. This approach renders visible the causal mechanisms that HM often neglects in explaining relations of production, thereby enabling an understanding of the multi-layered nature of social change that is essential for determining the direction of global environmental politics (Erçandırılı 2026). Thus, thinking HM together with CR preserves the determining role of material relations over social structures and nature while providing an ontological depth capable of explaining the complex interactions among agency, ideology, and nature. The integration of CR and HM therefore allows for an ontologically non-anthropocentric interpretation of HM (Joseph 2002).

In this context, I argue that despite its theoretical contributions, the posthumanist orientation remains ontologically inadequate. From a CR-informed HM perspective, posthumanist IR, while emphasizing the reciprocal interaction between nature and society and advocating a non-anthropocentric ontology, obscures the causal relations among the generative mechanisms operating at different levels. Such an ontological framework conceives the ecological crisis not as a product of historically specific social conditions and relations, but as a contingent outcome of interactions among heterogeneous entities. By dispersing and decentring agency across heterogeneous human and non-human entities, the posthumanist approach blurs the relations between social structures and material processes of production, abstracting the ecological crisis from the internal contradictions of the capitalist mode of production. This abstraction renders invisible how domination over nature is reproduced through class, property, and state forms, displacing ecological destruction from a historically constituted process into a moral or ontological concern. Consequently, posthumanism fails to account for the material dynamics of social and ecological transformation—namely, historically constituted

class relations, modes of production, and structures of political power—and instead conceives transformation merely as an ontological reorientation or a matter of ethical awareness.

The argument developed in this study proceeds in five stages. First, I examine how posthumanism in social theory, in conjunction with new materialist ontology, challenges anthropocentric modes of thought. Second, I discuss the theoretical capacity of CR-informed HM to explain socio-natural relations. Third, I provide a critical assessment through a CR-informed HM perspective of the key concepts that dominate posthumanist IR, such as systems thinking, complexity, and contingency. Fourth, I focus on the concept of agency to demonstrate why posthumanism does not offer a genuinely transformative potential for global ecological politics. Finally, I explain why a CR-informed HM framework offers a more explanatory and hopeful orientation for reimagining global ecological politics.

Posthumanism, New Materialism and a Challenge to Anthropocentrism

Posthumanism conceptualizes the human not as a privileged subject but as a process emerging within material–discursive relations. Knowledge and agency are not fixed attributes belonging to pre-given subjects, but dynamic relations co-constituted within material–discursive practices. In this sense, posthumanists, together with new materialists, define themselves as representatives of a return to “matter”; yet the “new” in this materialism does not completely abandon the linguistic (or interpretive, cultural) turn. Rather, it proposes an ontology embedded in an understanding based on the co-production of the material and the discursive dimensions of reality (Barad 2007).

Braidotti (2013), a key figure in debates on posthumanism, defines it as “an assumption about the vital, self-organizing and, yet non-naturalistic structure of living matter itself.” The new materialist ontology on which posthumanism rests relies upon an internal agent; it is “a materialisation that contains its own energies and forces of transformation.” Matter is “self-organising,” “sui generis,” and “dynamic” (Coole 2010:454). According to new materialist ontology, Enlightenment philosophy placed the human at the centre of life, positioning it as ontologically superior to nature and other beings. This has given rise to an epistemic regime that produces domination over both nature and non-human entities (Fox and Alldred 2018). In this sense, dualisms such as mind/matter, nature/culture, and society/natural sciences must be rejected, and should be conceptualized as a process constituted within material–discursive relations. Entities apprehended through continuous processes of becoming, interaction, and multiple agencies do not possess pre-given essential properties but are active components that transform one another within relational processes (Coole and Frost 2010). This ontological orientation also redefines the notion of agency: agency is no longer an attribute specific to humans but a distributed capacity emerging from the coexistence of different material forms. Bennett’s (2010) concept of “vibrant matter” asserts that even inanimate entities possess their own capacities for activity and brings this vitality of matter to the centre of ecological and political thought.

Latour's (2005) actor–network theory, by displacing the human from a privileged position and conceiving the social in terms of the interactive relations among human and non-human entities, constitutes one of the significant antecedents of posthumanist ontology. Latour (2005:16), in *Reassembling the Social*, argues that the social should be analysed not through hierarchical or transcendent structures but within a horizontal network of relations established among actors. This ontological orientation, known in the literature as hybridity, lies at the intersection of posthumanism and new materialism; both approaches emphasize that agency is distributed among humans, nature, and social structures (Bennett 2010: 23).

New materialist ontology transcends the established subject–object dualism and, by emphasizing object–object rather than subject–object relations, eliminates the hierarchy among agents (Chandler 2015). According to Coole (2013: 453), conceiving matter as self-transformative and fluid invalidates the traditional understanding that defines agency solely in terms of conscious and rational human subjects. In this framework, agency is defined less by intention and consciousness than by relational and vital mechanisms of effect operating among different beings and processes. Consequently, non-human entities and even machines are viewed as agents capable of producing change. Posthumanist ontology rejects the idea of transforming or dominating nature; instead, agency is interpreted as the outcome of reciprocal interactions that emerge through uncontrollable processes (Coole 2013: 458).

In this sense, posthumanists, by emphasizing a post-anthropocentric conception of reality, focus on new ethical and behavioural forms grounded in ecological sensitivity and the recognition of difference. This orientation is directly linked to critiques developed against anthropocentric thought that positions the human as the measure of the universe. Anthropocentrism is founded upon an ontological assumption that defines nature as passive resource and the human as rational subject. It reduces the value of all living and non-living entities to their relevance for human interest. According to posthumanists, such anthropocentrism is one of the principal causes of contemporary ecological and social crises, as it accords ontological priority to human life, needs, and intentions, thereby organizing being hierarchically. For this reason, posthumanism seeks to replace the anthropocentric worldview with a relational ontology that redefines the interaction between human and non-human entities (Cotter 2016).

Critical Realism: The Return of Historical Materialism

As the critical realist Roy Bhaskar (1979: 224–225) notes, HM developed by Karl Marx and Friedrich Engels is in profound ontological and epistemological harmony with the philosophy of CR. HM, developed by Marx and Engels to explain the evolution of social and natural processes, is grounded in the dialectical method and aims to account for the historical formation of nature alongside relations of production. CR, on the other hand, offers an ontology at the level of the philosophy of science that deepens this historical-materialist dialectic and strengthens causal explanation (Yalvaç 2009; Kutzik and Porpora 2021).

Bhaskar's (1979) meta-theoretical dialectical realism conceptualizes the relationship between nature and society as mutually interactive at both ontological and causal levels. This approach occupies a decisive position in the agency–structure debate: social structure provides both the conditions and the constraints for agency, while agents reproduce or transform these structures through their practices.

This framework, offered by Bhaskar's dialectical realism, allows nature and society to be treated not as opposites but as different levels of the same material process. Bhaskar's (1979) stratified ontology reveals the multi-layered and open-ended character of causal powers in social and natural processes, demonstrating that nature is not a mere product of human activity but an active domain in its own right. In accordance with Bhaskar's meta-theoretical framework, Kate Soper (1995: 155) defines nature as the totality of material structures and processes that exist independently of human activity; the powers and causal effects of these structures determine the necessary conditions and possible forms of every human practice. Soper emphasizes that nature is not entirely constructed by humans, while humans, as beings derived from nature, cannot be separated from it. Thus, humanity and nature constitute two irreducible yet interdependent domains: one refers to the historical realm of existence shaped by social relations, and the other to the material and causal foundation upon which these relations rest.

According to CR, the world is a structured, stratified, and open system, and the task of science is to uncover the causal mechanisms underlying observable phenomena (Sayer 2000; Bhaskar and Hartwig 2010). Accordingly, CR maintains that socio-ecological reality cannot be explained solely through observable events, since underlying mechanisms enduring structures and tendencies determine the internal connections between nature and society (Sayer 2000).

Jason Moore's (2015) world-ecology is grounded in a monist ontology that conceptualises "society" and "nature" on a single plane of co-constitution and frames capitalism as "capitalism-in-nature". By contrast, the argument advanced here requires an ontological distinction between historically constituted social structures—such as relations of production and state forms—and the causal powers of natural systems, since only through such a distinction can stratified mechanisms, the structure–agency relation, and the material conditions of transformative praxis be specified with analytical clarity. For this reason, rather than reconstructing capitalism's relation to nature on a monist plane, the analysis follows the metabolic rift approach associated with John Bellamy Foster (2016), which foregrounds the contradictions between capitalist production relations and the material limits of nature (Erçandırlı 2026).

HM primarily situates human–nature relations within a material field that possesses its own causal laws, operating alongside production processes and social structures. Hence, although the society–nature relationship is historically contingent, open-ended, and context-specific, the critical realist perspective aims to conceptualize its orientations, tendencies, and boundary conditions. From an HM standpoint, modes of production (feudalism, capitalism,

socialism) function as historical structures that shape the forms of human interaction with nature. However, HM interprets these relations not merely through the technical transformation of matter but within social contexts structured by power, property, and class relations. In this respect, HM, by focusing on the historical dialectic between humans and non-human entities, analyses the socialization of nature within processes of production. It thus provides a robust theoretical framework for understanding how relations of production transform nature and how these transformations intersect with forms of social domination (Choat 2018: 1035; Erçandırlı 2021).

CR-informed HM emphasizes the complex and dialectical nature of the relationship between nature and society. This approach rejects a categorical separation between the given and the socially constructed dimensions of reality, making it possible to conceive social and natural processes as parts of a single relational totality. The ontology that posits nature and society as components of the same material whole, operating on distinct yet irreducible planes, conceptualizes nature as the encompassing structure that includes humans and other beings, while positioning humanity as an active part of this structure (Malm 2018; 2019).

The historical-dialectical materialist worldview conceives reality as a continuous relation of internality and mutual determination between the whole and its parts. For Marx and Engels, dialectics is not a formula for producing predetermined results but a method that enables an understanding of the movement, transformation, and contradictions of social and natural processes (Marx and Engels 1976: 31–34). In this conception, reality is not an aggregate of isolated objects or events, but a historical totality woven through internal connections. Dialectics thus expresses the unity of opposites, mutual dependence, and the coexistence of phenomena with distinct characteristics within the same material ground. In other words, the dialectic of nature demonstrates that human existence is in constant causal interaction with the rest of nature, and this reciprocal relation constitutes the foundation of social and ecological processes.

In this interpretation of HM, Bhaskar's anti-anthropocentrism largely converges. As Bhaskar (2013) explains, anti-anthropocentrism at the ontological level rests on three layers of relationality: first, *ecological asymmetry*, that is, the existential independence of nature from humanity; second, the ontological and material dependence of humanity upon nature; and third, the natural character of the human species, in other words, that humanity is created by and shares a common existential ground with nature. This expresses the non-dualistic character of the human–nature relationship. Within this multi-layered ontology, CR defines nature and society as distinct yet mutually active domains; these layers are not predetermined but transform one another through historical processes. In this respect, CR deepens the ontological intuitions of posthumanism regarding agency and partially approaches its conception of distributed agency; however, it simultaneously retains the distinctive contribution of historical-dialectical materialism namely, that social relations are structured through modes of production, class formations, and processes of material reproduction (Bhaskar 1979; Sayer 2000). To avoid determinism, Ted Benton's (1993: 31) notion of naturalism grounds

human existence in the material reality of nature, upon which humanity both depends and through which it is historically constituted. Thus, CR-informed HM provides an explanatory ontological framework that unites the relationship between humans and non-humans at the levels of historical determination and causal explanation.

Systems, Complexity Thinking and Social Structures

The discipline of IR first engaged with posthumanist debates through the complexity theory developed by Erica Cudworth and Stephen Hobden (2011; 2013). This theory employs the concepts of adaptive systems, self-organisation, co-constitution, and emergence to explain the co-formation of social and natural processes. Posthumanism allows for analysing the relationship between social and natural systems without reducing it to a one-directional determination, preserving the specific properties of each, with an emphasis on contingency and relational co-constitution rather than on assigning causal primacy or identifying generative mechanisms.

Cudworth and Hobden's (2011; 2013) understanding of systems is based on the assumption that the world is composed of non-linear, contingent, and unpredictable relations. Systems are not fixed structures or stable, closed orders; rather, they are self-organising processes continuously reproduced through the mutual interaction of human and non-human beings. Complexity is treated as an ontological position in which reality consists of interlinked processes operating at different scales, irreducible to one another. They (2013: 650) argue that the processes of order, instability, and transformation in nature and society operate simultaneously, and that the relationship between nature and society must therefore be understood through processes of emergence. This view partially overlaps with Bhaskar's (1979) open systems approach; but, differs in how indeterminacy is specified: Cudworth and Hobden treat indeterminacy as an ontological feature of reality, whereas Bhaskar treats openness as ontological but links indeterminacy to the difficulty of isolating and identifying causal mechanisms under open-system conditions.

In Bhaskar's understanding of open systems, indeterminacy results from the ontological depth of the world, that is, from the operation of *generative mechanisms* at different levels. Hence, explanation seeks to reveal how causal mechanisms become activated historically (Bhaskar 2008). Unlike complexity theory, for Bhaskar, causal powers in open systems are not products of undirected or purely contingent interactions but of mechanisms activated under specific historical and material conditions. Bhaskar's concept of *emergence* therefore does not signify accidental indeterminacy but refers to new properties arising from the interaction of irreducible causal powers operating at different levels (Bhaskar 1993: 56). In Archer's (1995) morphogenetic approach, the interplay of emergent structural and agential powers accounts for the reproduction and transformation of social forms over time. For Cudworth and Hobden, by contrast, indeterminacy is a property of reality itself: complexity expresses the inherent potential for constant change embedded in the nature of systems. From a Bhaskarian

perspective, complexity implies not only multiplicity but also *causal depth* the necessity to analyse the mechanisms through which socio-ecological structures enable complexity to emerge (Benton 1993; Archer 1995). As Choat (2018: 1028) notes, emergent properties in CR are distinct causal powers derived from the interaction of different entities. This approach conceptualizes change not as random but as a process arising within historical and material circumstances.

For critical realists, social structures, human agents, and non-human nature are ontologically distinct yet interdependent entities possessing emergent properties (Kutzik and Porpora 2021: 19). Since each possesses its own causal powers, neither the social nor the natural world can be reduced to a single component. In CR, *emergence* occurs when the interaction of different entities produces a new level of reality. This concept expresses how, in complex systems, new qualities arise that cannot be derived from the properties of their components. The classical example is that the liquidity of water cannot be reduced to any property of hydrogen or oxygen; liquidity is a new causal power that emerges from their combination (Kutzik and Porpora 2021: 18–19).

As Malm (2019: 145) emphasizes, HM accepts the interpenetration of nature and society while preserving the distinct causal powers that operate at different levels. The layered ontology of CR holds that social structures, human practices, and non-human nature each possess their own causal powers. This understanding aligns with Bhaskar's *transformational model of social activity* (Bhaskar 1998: 33; Kolasi 2024): social agents act within existing structures but simultaneously possess the capacity to transform them. Hence, nature, society, and action are explained not through one-directional determinations but through the reciprocal activation of causal powers. For HM, what is decisive is not nature *per se* but the social–material processes through which nature is transformed (Choat 2018: 1034). As Cotter (2016: 174) argues, when the labour process is detached from its dialectical relation to the means and relations of production, not only the structural dimension of social relations but also the concept of agency itself is weakened. Yet the means of production are shaped through human labour under specific historical conditions, which form the very foundation of the systemic interactions emphasized by Cudworth and Hobden. Therefore, as Foster et al. (2010: 55) underline, natural history must be understood together with social history. Ecological destruction, accordingly, can only be grasped in its historical context, as a process that is both biological and social. The emergent ontology of CR locates this historical determination in the mutual transformation of nature and society, thereby integrating posthumanism's ontological openness with the principle of material determination central to HM.

The Problem of Agency

In the discipline of IR, actors are generally assumed to be autonomous cognitive subjects capable of making rational decisions, a conception that aligns with notions of intention, freedom, and rationality. Conversely, posthumanist studies argue that “non-human life and

non-human animals are also social actors able to exercise agency” (Cudworth and Hobden 2015a: 140). Accordingly, -humanity both the state and society- does not solely act in shaping the world; rather, humans and non-humans are agential participants in world politics (Kavalski and Zolkos 2016).

Cudworth and Hobden’s (2018: 30–31) approach is explicitly influenced by Latour and new materialism. They explain that agency (the power to effect change) does not reside in individual humans but emerges within relations as a form of distributed agency. Similarly, Chandler (2013: 516–520) argues that the modern world continues to reproduce these assumptions, yet in the posthuman context, “we may no longer be able to act as subjects.” He asserts that certain governance discourses attempt to rearticulate the binary foundations of liberal progress philosophy. Contrary to dominant belief, Chandler (2013: 528) suggests that in the posthuman world, “we can never be human subjects, collectively, understanding, constituting and transforming our world”. The assumption underlying Chandler’s argument is that the material powers of non-human entities (such as animals, environmental elements, and machines) should also be considered within the effective capacities of international politics.

According to Hobden (2015), rethinking nature as an actor in IR requires an ontological and political rethinking of the discipline itself. Nature is not only an entity in which human existence and human activity occur, but also it is an entity in which “human systems interact and depend on non-human systems such as geography, food systems, water systems and the atmosphere” (Hobden, 2015: 169). In that way, Hobden (2015: 172- 176) offers “thinking about the place of humans as part of nature” and looking initially to the “subject of big history.” Hobden, investigating the human in natural history, has proposed that “nature is absolutely fundamental” in understanding the appearance and development of the human species.

At this point, Cudworth and Hobden’s (2018: 47–70) approach offers a more flexible conceptualization of agency grounded in the mutual interaction between human and non-human beings. According to them, agency emerges within pre-existing networks of social relations marked by unequal distributions of power and resources. This web of relations is shaped by the material existence of both human and non-human actors, each possessing systemic capacities to generate effects. Consistent with this, they (2018: 30) explicitly criticize Latour and certain new materialist interpretations for flattening the world in ways that obscure hierarchies and differences in power among actors. Such flattening, they argue, tends to blur concrete political issues related to hierarchy and domination. Hence, Cudworth and Hobden (2018: 11-12) emphasize that entirely dismissing the human subject undermines both political responsibility and the potential for resistance; instead, they defend a relational yet still agential posthuman subjectivity and reflexive agency.

Cudworth and Hobden (2013; 2018: 47) extend Margaret Archer’s formulation of the structure–agency relationship within CR to encompass both human and non-human forms of agency. Archer’s (1995) aim was to explain how social transformation occurs through agents’ intentional action and reflexivity without denying the conditioning role of structures.

Her morphogenetic approach analytically separates structure and agency temporally, allowing social change to be understood as an interaction between the constraining properties of inherited structures and the agents' capacities for reflection, evaluation, and action within them. Within this framework, the agent is not merely an acting subject but a being capable of meaning-making and conscious transformation within historically constituted conditions.

While extending this model, Cudworth and Hobden reinterpret agency as a property dispersed across the entire network of ecological relations. Reproductive agency refers to actions that sustain existing socio-ecological relations, whereas transformative agency refers to practices that reorganize these relations in more just and sustainable ways. Archer's (2003: 5-6) notion of the internal conversation central to her conception of reflexivity is relaxed in Cudworth and Hobden's reading: they claim that some non-human beings also possess the capacity to respond to environmental changes and restore systemic balance. This forms the basis of their posthumanist ethical-ontological framework called *Terraism*. Terraism redefines agency as the collective potential of all "earthly beings" to co-create a shared habitat, thereby extending ethical responsibility beyond the human species (Cudworth and Hobden 2018).

This expanded understanding of agency significantly departs from the explanatory ontology of CR. For Archer, reflexive agency entails a historically situated capacity for transformation linked to subjective awareness and intention; whereas for Cudworth and Hobden, agency arises not from deliberate action but from the interactive processes that sustain ecological continuity among multiple beings. Thus, while the terraist approach redefines nature-society relations around an ethical category of coexistence, it moves away from CR's concern with causal and historical mechanisms. In CR, reflexive agency is defined by conscious awareness, intention, and the capacity for deliberate transformation of historically formed structures (Archer 1995: 196).

In this regard, as Colin Wight (2015: 198–199) observes, posthumanist ontology, in attempting to dissolve the nature-society divide, tends to conflate the concepts of causal force and agency. Wight (2015: 199) argues that causal force refers to the effective capacity that arises within material processes through cause-effect relations, whereas agency designates a being capable of acting intentionally toward specific goals through awareness and purpose. Consequently, treating all causal processes as instances of agency eliminates the intentional dimension that constitutes the core of action. By overlooking this distinction, Cudworth and Hobden, much like flat ontology advocates, risk obscuring the historical and structural conditioning of human transformation, reducing it instead to the "spontaneity" of material processes and generating conceptual confusions that hinder causal explanation.

This conflation makes it difficult to grasp the historical dynamics of structural power relations and risks reducing agency to the spontaneity of material processes. Indeed, as posthumanists argue, dogs participate in wars in various ways. Mine-detection dogs, for example, experience war in complex forms (Cudworth and Hobden 2015b). Yet cats and dogs cannot be the conscious leaders, guides, or negotiators of an ecological revolution or

environmental regime. Non-human beings lack the capacity to acquire causal knowledge, reason with it, and intervene rationally on its basis. This is not a defence of anthropocentrism but rather an analysis of the underlying issue of causality and how it may be addressed (Jakobsen 2017).

From the perspective of HM, neither human nor non-human actors should be understood as isolated subjects; rather, they are positioned and constrained by specific relations of production, institutional arrangements, and property forms. From this standpoint, the capacity of agents cannot be explained solely by their individual abilities or by non-human causal capacities; it is shaped and limited by structural–historical and class-based mechanisms such as resource control, institutional mandate, and scale asymmetry (Kutzik and Porpora 2021: 26–27). Interpretations that place human sociability on the same ontological level as electromagnetic fields or viruses (Cudworth and Hobden 2022) overlook this structural determination thus rendering invisible which classes of agents, under which historical and material conditions, make decisions; which fractions of capital mobilize which resources; and how specific relational configurations produce domination and exploitation (White 2013: 676). Therefore, while acknowledging the causal roles of non-humans, it is essential to reveal the structural positions and power relations within which those roles become effective; otherwise, theory fails to account for the socio-global roots of ecological destruction (Cotter 2016: 176).

These clarifications do not imply a hierarchical understanding that reaffirms human superiority; rather, they aim to specify how and through which social relations the interactions between humans and non-humans have diversified and transformed historically and under what material conditions such transformations occur. As many historical materialist thinkers would agree, this line of reasoning is not another way of legitimizing class exploitation and capitalist production. At this point, Cudworth and Hobden’s notion of distributed agency represents a fundamental divergence from the way CR relates agency to historical transformation. For them, action emerges not merely from human intentionality but from the reciprocal interactions between human and non-human entities. Cudworth and Hobden thus understand action in terms of the visibility of interactions rather than the underlying generative mechanisms (structures). In doing so, they replace the historical transformability central to praxis with the idea of perpetual flow and interaction. From a CR perspective, however, this approach risks weakening the explanatory power of structural forces and historical positionalities. Hence, Cudworth and Hobden’s framework, by equating human praxis with nature and technology, displaces the social foundation of transformative agency.

In Defence of the Necessity of Material Change in Social Structures for Ecological Hope

The dialectical materialist understanding of the nature–society relationship, unlike approaches that ignore the fact that humans have historically damaged nature through social relations of production, requires understanding ecological destruction not merely as a biological

transformation but as the outcome of the material–social driving forces emerging from the interaction between contradictory social structures and natural processes that shape capitalist production relations (Malm 2019: 170–171). However, as critical realists explicitly point out, the assumption that natural laws can be overcome in every historical period is invalid; nature is reproduced through social relations, yet its irreducibility to them points to the urgency of social transformation (Malm 2018). Therefore, biophysical processes such as climate change, biodiversity loss, ocean acidification, and nitrogen and phosphorus cycles, and the planetary boundaries associated with them, must be considered anthropogenic and at the same time realities independent of society (Malm 2019: 172). Hence, a conception of global ecological politics that combines CR and HM acknowledges the irreducible causal powers of nature while locating the explanation of ecological destruction in the functioning and transformation of social structures.

What must be explicitly emphasized here is that the embedded problems of global ecological politics cannot be resolved based on a posthumanist ontological framing of socio-natural relations. While Cudworth and Hobden (2018) often present their approach in epistemological and analytical terms, the wider posthumanist emphasis on relational co-constitution and contingency carries ontological implications for what can count as explanation and transformation. As I have sought to demonstrate in this study, to achieve social transformation, it is first necessary to explain the historical and material relationship between capitalist production relations and global ecological destruction: for the last five centuries, capitalism has been established as a dual mode of production separating society from nature and natural laws; the roots of the ecological crisis we face today must be traced to the gradual emergence of the capitalist world system in Europe in the late fifteenth century. The geographical discoveries not only enabled the seizure of new resources but also initiated a fundamental restructuring of the European economy and agriculture; the flow of gold, silver, and plant diversity from the Americas first transformed Europe and then the global economy, providing the material basis for capitalist expansion. This process made possible the next stage of capitalist development the Industrial Revolution during which, by the late eighteenth and nineteenth centuries, the scale of production changed radically, and an energy regime dominated by fossil fuels was established (Malm 2016; Foster 2020). Today, the institutions of capitalist states function as mechanisms that protect the interests of capitalist classes and reproduce fossil fuel dependency; therefore, global ecological politics appears far from enacting the deep politico-economic transformations required to abandon fossil fuels. The problem lies in the privileges granted to capitalist classes by the competitive system of capitalist states that secure the continuity of capital under globalization, and in the structural mechanisms that obstruct transformation in the face of crisis.

A historical–dialectical materialist reading that does not reduce ecological destruction to the social locates the roots of the ecological crisis within the internal contradictions of the capitalist mode of production and its class structure. The capitalist mode of production renders nature, along with human labour, a fundamental input of capital accumulation, reducing it to a

commodified condition of production. This domination denies the causal laws and ecological limits of nature, transforming it into a means to sustain the continuity of capital accumulation. The capitalist state form reproduces this exploitation through economic, legal, and ideological relations, eroding nature's capacity for self-renewal and thereby ensuring the continuity of the circuit of capital. Thus, capital accumulation violates the material limits of both labour and nature, sustaining itself through the permanence of crises. Contemporary capitalism, even amid ecological devastation, subjugates nature to an ever-deepening regime of exploitation through alliances with privileged classes, transforming ecological crisis into new forms of accumulation.

Nature, however, is not a passive realm fully subjected to capitalist domination; through its own internal causal powers, metabolic processes, and rebound dynamics, it constrains and shapes social production (Foster 2020). In this context, one of the fundamental problems of global ecological politics is how rapidly states and international institutions will be able to implement the necessary social and institutional transformations, given the accelerating pace of ecological destruction (Newell and Paterson 2010: 157–160). For instance, the COPs organized by states that are parties to the UN Framework Convention on Climate Change have increasingly revealed how the proposed solutions and their outcomes reproduce hegemonic beliefs and discourses. From COP27 onwards, this reproduction has also become empirically legible in the composition of participation itself: at COP27 at least 636 fossil fuel lobbyists were accredited, at COP28 at least 2,456, at COP29 at least 1,773, and at COP30 more than 1,600 (Global Witness 2022; Kick Big Polluters Out 2023; Corporate Europe Observatory 2024; Global Witness 2025). These figures should not be read as a mere problem of “representation.” They indicate a structurally organised proximity between fossil capital and the negotiation arena, where the state form—under conditions of inter-state competition—mediates accumulation imperatives into the language of feasibility, realism, and “deliverable outcomes.” In practice, this proximity narrows the horizon of legitimate solutions: questions of property, production, and class power are displaced, while market-compatible instruments and investment-friendly transitions are elevated as the common sense of climate governance. Put differently, the COP process repeatedly frames ecological breakdown as a problem of managerial coordination and finance mobilisation, rather than as a confrontation with the social relations through which nature is appropriated and commodified.

The 2015 Paris Climate Agreement, convened with the agenda of gradually reducing fossil fuel consumption, exposed the contradiction between Europe's goals to decrease fossil dependency and its competitive capitalist interests. While Europe sought to accelerate the energy transition, no concrete progress was achieved in negotiations with fossil fuel producers. The solutions promoted within the COP processes green transition, geoengineering, and reliance on critical minerals function not as responses mitigating the ecological crisis but as systemic strategies restructuring capital accumulation. This logic is also reproduced in “Green New Deal” programmes, which are frequently articulated as competitiveness-centred investment packages that reconcile decarbonisation with profitability, thereby shifting the

horizon of climate politics from binding socio-ecological transformation to market-conforming retooling of production and finance. Transnational corporations produce legitimacy through environmentally friendly discourses and “green” products, creating new profit opportunities via carbon markets, green bonds, and private finance mechanisms. At this point, the class–state nexus becomes analytically central: finance and energy fractions should be understood not as external “stakeholders” but as forces embedded in the power relations that shape how transition is defined, which risks are rendered governable, and which costs are socialised. As long as climate governance remains organised around the protection of competitiveness and investment climates, mitigation is repeatedly rearticulated in terms of derisking, portfolio management, and technological substitution—forms that reorganise accumulation while leaving the structural drivers of ecological destruction intact. This situation is directly linked to states’ energy policies, their positions within the global economy, their relations with fractions of capital, and their pursuit of hegemony.

Within this framework, Cudworth and Hobden’s posthumanist interventions treat non-human systems—including the climate system—as possessing agential capacities, thereby reconfiguring nature as an actor in global politics (Cudworth and Hobden 2011; 2018); however, a critical realist and historically materialist analysis conceive nature not as a subject endowed with agency but as a material structure possessing causal powers. From this perspective, climate change is a historical process that emerges from the dialectical relations between the causal powers of nature and the structural contradictions of the capitalist mode of production. When the internal dynamics of natural systems come into conflict with the imperative of capital accumulation, the ecological crisis intensifies; yet this process does not generate transformative agency by itself. On the contrary, the destruction produced by climate change becomes the institutional and political expression of attempts to manage and sustain the crisis of capital accumulation. In this sense, although COP summits are organized in response to the existence of climate change, this does not render nature a subject; their orientation and effectiveness are determined by the class interests that guide the system of capitalist states. Therefore, overcoming the ecological crisis depends not on the agency of nature but on the transformation of the social relations through which nature is appropriated, that is, the dialectical transformation of class relations, modes of production, and property structures that constitute the historical formation of capitalism. The institutional framework observed in COP summits represents the political manifestation of the discourse that attributes agency to nature: climate change is presented as a universal “human problem” detached from relations of production, thereby reducing the ecological limits of capital accumulation to an internal technical issue of the system. Thus, despite its claim to transcend the dualism between nature and humanity, posthumanist discourse ultimately produces a discursive form that reproduces capitalism’s domination over nature.

Systemic transformation in response to ecological destruction necessarily relies on forms of social struggle; however, this does not imply excluding the harms suffered by non-human species from class-based analysis. On the contrary, from a historical materialist

perspective, the damage inflicted upon non-human life is directly linked to capital's modes of appropriation and commodification of nature. Moving beyond anthropocentrism therefore does not require attributing ontological agency to nature, but rather transforming relations of production, property regimes, and state forms in ways that secure the material conditions of reproduction for both human and non-human life. Within this framework, the defence of the "rights" of non-human species should be understood not as a matter of ethical recognition, but as part of binding institutional arrangements, public planning, and collective praxis aimed at protecting ecosystem capacities and biotic processes. Such an approach does not narrow the scope of class-based struggle; instead, it reconstructs it within a broader project of material transformation oriented toward repairing the metabolic relations between nature and society. Consequently, the horizon of transformation also entails the construction of forms of struggle that transcend the limits of the nation-state and operate at a global scale.

"Ecological hope" can advance not through ethical sensitivity or the erasure of ontological distinctions between nature and society, but through the transformation of property relations, relations of production, and the architectures of state–capital power. If the root of the problem lies in the class-based organization of the global capitalist system and the limits of nature point to the necessity of transforming the social system, then halting ecological destruction requires the reorganization of social relations (Malm 2018: 181). Such transformation not only pushes the boundaries of existing modes of production but also necessitates the reconstruction of historical praxis. Transformative action should be understood not as managing the symptoms of ecological crisis, but as a political praxis that abolishes the material structures producing it. Unless the mode of production, property relations, and state–capital linkages are transformed, this hope will remain a normative claim detached from the material conditions of social change. Therefore, a transformative, collective, and class-based struggle against transnational capital has become not merely an ethical orientation but the necessary historical condition for eliminating the structural causes of ecological destruction.

Conclusion

This article has focused on whether posthumanism's promises can constitute a genuine source of hope for global ecological politics within the framework of the structure-agent problem. Posthumanist ontology, by expanding the concept of agency to include non-human entities as actors, obscures the decisive roles of historically determined social agents classes, states, and blocs of capital in the ecological crisis. While posthumanists propose an emancipatory ontology against capitalism, colonialism, and human exceptionalism, they fail to adequately explain the historical determinations of the social and economic relations that produce ecological crisis. Yet the structure–agent debate reveals that ecological change is not merely the outcome of multiple interactions but the expression of historically constituted relations of production. Therefore, genuine ecological transformation also requires the transformation of historically organized social structures.

In contrast to posthumanist approaches that ground ecological emancipation in an ethical reorientation between human and non-human beings, a CR–HM perspective locates the source of ecological hope in the material transformation of social structures. From this perspective, emancipation does not arise through ontological flattening or the equal distribution of agential capacity to all beings, but through explaining how causal powers are organized within historical periods, modes of production, and state–capital formations.

CR acknowledges that nature possesses irreducible causal mechanisms, yet these mechanisms are historically activated only through social mediation. Consequently, transformative agency capable of confronting ecological collapse is not the product of ethical coexistence but of praxis directed at transforming the structural conditions of capital accumulation. As HM emphasizes, if the roots of the ecological crisis lie in the class-based organization of the global capitalist system and the limits of nature point to the urgency of transforming the social system, then genuine ecological hope arises from the reconstitution of social relations. In this sense, the problem lies not in ontological equality but in the political economy of domination; emancipation rests not on the redistribution of agential capacity but on the transformation of the structural mechanisms that constrain it. Therefore, true hope does not lie in rejecting anthropocentrism per se, but in transforming the class relations that reproduce the ecological foundations of capitalist accumulation, from which anthropocentrism itself emerges.

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