Global Surpluses of Extraction and Slow Climate Violence: A Sociological Framework

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This review article examines the concept of slow violence in relation to the current climate collapse. It outlines the extractive relationship between states in the Global North and Global South, and explores how this relationship creates and sustains disproportionate climate violence for the Global South. It critiques proposed adaptation and mitigation solutions for the Global South that emphasize market-led proposals and a return on investments that mostly benefit the Global North. It argues that these proposals fail to critically engage with the root causes of vulnerability to climate change and Greenhouse Gas emissions that cause climate change. The review uses World Systems Theory to analyze the power differentials between South and North, and concepts from the "Color Line," "Necropolitics," and "Slow Violence" to underline the post-colonial character of this relationship. These provide historical context to the current hegemonic role of the Global North in carbon emission negotiations and responses. In doing so, the article highlights the need to think about climate change, and solutions to climate change, as a driver of slow violence and surplus climate violence by the Global North against the Global South.

Introduction: Climate (in)Justice and Global Patterns of Disparity in Climate Impacts

The sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) paints a picture of severe climate change with irreversible effects. Even if the world successfully limited further global warming, irreparable damage has already occurred in some places (IPCC 2022a). Countries in the Global North have historically contributed the most carbon emissions and hold greater capacity to reduce their emissions and adapt to the effects of climate change. Meanwhile, denizens of the Global South suffer a disparate distribution of climate harms despite having little contribution to aggregate emissions (Barnett 2007; Islam and Winkel 2017). This has resulted in unequal human suffering, such as forced relocations, loss of property, lower quality of

life, and death across the Global South (Hoogendoorn and Fitchett 2018; van der Ploeg et al. 2020).

Global patterns of inequality are a product of colonialism (Rice, Long, and Levenda 2021). Resource extraction has resulted in unequal ecological exchanges that have led to a vast accumulation of wealth in the Global North at the expense of wellbeing and development in the Global South (Roberts and Parks 2009). Climate change exacerbates these environmental inequalities and acts as a "threat multiplier" for example, by amplifying the likelihood of conflict and food insecurity on populations (Dodson et al. 2020). Further, climate change is also a symptom of racially driven "economic (dis)order" based on "extraction [and] accumulation through dispossession" (Gonzalez 2020:109).

Despite increasing scientific evidence on the causes and unequal impacts of climate change, researchers have observed action that fails to reflect the urgency of climate change. Boston and Lempp (2011) and Munck af Rosenschöld, Rozema, and Frye-Levine (2014) attribute this failure to political and institutional inertia that is driven by: (1) the perceived high costs of climate action, (2) uncertainty in the effects and effectiveness of climate solutions, and (3) path dependence, power, and legitimacy.

Responses to such deep-rooted causes of climate change and limits on solutions to this crisis is an important area of scholarly focus, as these have deep implications for how societies react to such crises. Recent events, such as the global expansion of the Black Lives Matter movement and the Covid-19 pandemic, highlight important questions at the intersection of government policy and survival: Whose lives and what living entities are deemed worth saving, and at what cost? Whose lives and what living entities are considered dispensable to preserve existing governance and economic systems? How do state policies reflect these values? These questions hint at the idea of a "politics of death" which has attracted the attention of many sociologists and other interdisciplinary scholars in areas such as law and human rights studies (Barkow 2009; Estévez 2013) and history and politics (Branch 2010; Macmillan, Shofia, and Sigle 2018). These concerns are similarly well reflected in the extensive work that links climate change with structural violence and suffering (Dilts et al. 2012; Galtung and Höivik 1971).

Yet, even as we act now to reduce climate impacts, we have yet to see the worst of climate suffering. Wapner (2014) notes that climate suffering will persist irrespective of whether (or not) the world is able to address climate change. For poor and marginalized populations, this suffering is driven by sociopolitical and economic inequalities, most of which are likely to go unnoticed or purposefully ignored internationally (Evans 2016). For example, Soron (2007) notes that the climate crisis is sustained by continued fossil fuel extraction by corporations usually based in the Global North that benefit Global North-based

actors and countries. Most of these extractions are assumed to generate income and positive development benefits for host communities and countries, but these material benefits rarely manifest. For instance, see Burchill's (2010) discussion on the Congo. Instead, existing social, political, and economic arrangements result in sustained climate violence for marginalized populations which are simultaneously inflicted with resource and energy extraction and carbon and environmental pollutant injection.

"Climate violence" refers to the different forms of violence that are triggered by the effects of climate change (DeBoom 2021). Although thinking on climate violence is not new, most existing work focuses on climate violence as the link between climate change and its effects on conflict (Bonds 2016). In doing so, climate violence is reduced to only a factor of the direct effects of climate change risks on populations, for example, the effects of climate change on resource scarcity which results in conflict. This framing overlooks how climate violence is perpetrated through less traditional conceptualizations of violence. For example, climate violence can emerge as a by-product of mainstream climate solutions, such as when renewable energy projects ~~on~~ the Global South trigger land dispossession and the disruption of livelihoods of marginalized communities (see Lyons and Westoby 2014; Yenneti, Day, and Golubchikov 2016).

Climate violence is a form of climate injustice. As such, climate justice is a means for not only unpacking the structures that drive climate suffering but also providing solutions for remedying this multifaceted nature of suffering. Critical climate justice literature highlights the importance of responses to climate change that assign responsibility for and addresses the inequalities that drive climate change (San Martín and Wood 2022). State and non-state actors are therefore considered central to climate justice (Dietzel and Harris 2019; Furlan and Mariano 2021). Multi-scalar frameworks highlight the intersectional drivers of inequality and experiences of climate change (Sultana 2022). These recognize new forms of colonialism and integrate "intergenerational, multi-species, and intersectional" concepts that reflect non-western understandings of climate justice (San Martín and Wood 2022:260). This conception of climate justice is characterized by the intersection of class, race, gender, age, and regional location, among other facets of identity (Harlan et al. 2015).

However, understanding climate justice requires a more nuanced engagement with different multidisciplinary theoretical concepts. Sultana (2022:119) recognizes climate justice as transdisciplinary, being "inherently about praxis… [and involving] theoretically informed practice with reflection, one where there are continual feedbacks and integrations." Newell and Adow (2021:2) note the importance of adopting interdisciplinary approaches that engage with the scholarship on "the production of climate [in]justice." Multidisciplinarity, therefore,

requires closer ties between academic, philosophical and policy treatments of climate justice as well as analyses of linkages between scales and solutions (i.e., mitigation and adaptation) (Newell et al. 2021). This begs a self-conscious praxis that highlights the relationship between the Global North and Global South, accompanied by a re-framing of typical debates on responsibilities for historical emissions to focus on the perpetuation of climate violence.

We use this review to situate climate justice within sociological frameworks. We argue that the intersection between climate change and climate justice needs to engage with critical sociological and philosophical concepts to expose the multifaceted nature of the drivers of climate violence. In line with Bonds (2016), we define climate violence as more than interpersonal conflict driven by the intensification of climate change risks. Climate violence also wreaks disproportionate suffering upon the Global South. Understanding global and local patterns of climate violence, therefore, requires frameworks that capture the temporal and scalar relationships between actors and institutions causing climate change and propose solutions to the climate crisis.

Global Racialized Capitalism and the Production of Surplus Climate Violence in a World System

Several theories describe the roots and nature of inequalities between the Global North and South through the rise of capitalism. Here, we draw on the work of several sociologists to demonstrate the usefulness of World Systems Theory and the Color Line for understanding and analyzing climate inequalities. In particular, we draw on these frames to demonstrate how the existing global system of racial capitalism—in pursuit of surplus value—simultaneously produces surplus environmental and climate violence.

World Systems Theory (WST)

World Systems Theory (Wallerstein 2004) demonstrates existing power differentials between different regions in the global world order, or world-system. Wallerstein's (Wallerstein 2004:17) approach shifts the point of focus from nation-state as a standard unit of analysis to the "world system." This is defined as "a spatial/temporal zone which cuts across many political and cultural units, one that represents an integrated zone of activity and institutions which obey certain systemic rules."

Wallerstein uses categories of "core," "semi-peripheral," and "peripheral" countries to theorize the transfer of wealth between actors of the Global North and the Global South. Wallerstein suggests that through a global capitalist system, world trade is engineered to enable economically-strong countries to attain surplus value from the economically weaker, peripheral countries through a process of "unequal exchange" (Wallerstein 2011:30–31). Through this

hierarchical arrangement, power is wielded by core nations to influence the flow of surplus value (from labor, raw materials, energy, and resource extraction) away from the periphery (Bhambra 2014; Wallerstein 2004).

While inequalities across the Global North and South pre-date the industrial revolution, the latter is a significant point in time where existing inequalities became further embedded in the global order. In the post-World War II era, increased production resulted from the substitution of technologies for human labor. This meant a higher demand for energy and hence depletion of resources to power machines (Gould, Pellow, and Schnaiberg 2015). This coheres with the "Great Acceleration" period in plotting an accelerated uplift in anthropogenic carbon emissions in the twentieth century (Nixon 2011:12) and the overall "Anthropocene." The new configuration of production increased environmental degradation and industrial waste or 'new scarcities" (Gould, Pellow, and Schnaiberg 2015:xiv).

The need to pursue economic growth in capitalism locked society into a "treadmill of production," where state actors provided support for non-state actors whose infinite pursuit of profit wreaked havoc on the environment. In turn, ecosystems were polluted and became uninhabitable. This occurred in the context of globalization. Businesses in the Global North often relocated operations to the Global South to political regimes desperate to provide any form of employment to citizens. This meant that the former faced fewer labor demands due to a lack of workforce unionization and benefitted from poor environmental regulation (Gould, Pellow, and Schnaiberg 2004). The constant need to expand production results in the withdrawal of raw materials from peripheral nations to core nations, leading to depletions in the environment (Bunker 2005). Thus, environmental degradation, industrial waste, polluted ecosystems, and human exploitation became further concentrated in the Global South.

Beck (1992) would describe these environmental risks as accompanying modernization and advances in technology and science in industrial societies. Beck sees a refocusing of distributional logics from wealth to risk, where risks are not limitable to locales but expand with inequality across different borders and regions in the world-system. As such, while carbon emitting industries are in core countries, differential experiences of climate collapse take place in the periphery. The environmental risks, whether "toxicity" or increased emissions, are often recast as mere "externalities" (DeBoom 2021:902; Wallerstein 2004:48). Thus, environmental and climate inequalities result as a combination of environmentally degrading practices of environmental withdrawal (i.e., energy extraction) and additives (toxicity, GHG) (Gould, Pellow, and Schnaiberg 2004). Consequently, the continuous pursuit of profit and accumulation subjects peripheral countries to an endless *surplus of climate violence* stemming from the activities of Global North-based industries. This surplus of violence is

the obverse of the surplus value that core countries enjoy from extractive relationships of unequal exchange.

Core-periphery arrangements create unequal development and, by extension, also create unequal impacts of and vulnerabilities to climate change. Outsized production and consumption in the core countries drives GHG emissions and intensifies climate breakdown. For example, Africa, which is considered the most vulnerable continent to climate change, is responsible for only 3.8% of cumulative global GHG emissions to date while the United States and European Union countries are responsible for 25% and 22% of total GHG emissions, respectively (Ritchie, Roser, and Rosado 2020). Climate breakdown in turn impacts peripheral countries which often have the least access to resources and subsequently suffer disproportionate consequences (Thompson 2010), thus accelerating the harms of pre-existing inequalities that WST outlines.

While WST helps theorize the climate violence that marks the core-periphery, it fails to adequately capture the racial factors that drive this relationship (Bhambra 2014). Bhambra states that WST still treats the rise of Western capitalism as an endogenous process. This elides the brutal violence of slavery and colonialism that birthed these unequal relationships. Although WST recognizes the role of conquest in helping core countries build a peripheral economy and low-wage labor force (Wallerstein 2011), these are marginal reflections. In the following sections, we recast WST through the Color Line, which highlights how experiences of violence across time and space are based on classed and racialized power arrangements where decision makers in the core countries cast those in the periphery as dispensable.

The Color Line

The critical analysis of historical relations of extraction between poorer, mineral-rich countries that are used to enrich more militarily powerful countries has long roots in sociology. Du Bois (2021) was cognizant of how colonial extraction fed the industrial revolution. He stated how African observers could easily recognize the violence that marked the internecine strife of World War 1 in Europe from the colonial wars in the nineteenth century. European and U.S. wealth and success rest on the building blocks of these relations with its former colonies—what Du Bois called "the color line" (Du Bois 2018; Karenga 2003). The social construction of race enabled discrimination and justifications for slavery and Western European regimes of control over "darker nations" (Du Bois 2021:1; Karenga 2003). Racism can firstly be a violent act of imposition; ideology can then justify this imposition. From here, racism can take institutional forms that reproduce this ideology. Karenga (2003) names the World Bank, the International Monetary Fund and the World Trade Organization as

examples of institutions responsible for maintaining a world-system which favors the interests of white nations over nations of color.

Karenga (2003:145) speaks of the "Europeanization of human culture and its consciousness" that dismisses and marginalizes the stored-up knowledge and epistemologies of countries and people of color. This prioritization of European epistemology and Western extractivism mirrors Said's description of the Orientalizing scholars that accompanied imperialist armies (Said 2003). These scholars constructed Indigenous peoples of newly conquered territories as an unchanging, exoticized "Other" requiring civilizing (ibid). This Foucauldian-inspired paradigm highlights the discursive creation of the periphery by core country scholars and policymakers that continue to marginalize indigenous accounts of climate collapse and survival. Likewise, Fanon (2004) describes how the Cold War forced Global South countries to choose a future that aligned with either U.S. or USSR-led visions of development. Independent visions of national development were ignored then and continue to be in the present neoliberal global order.

In this way, material, epistemological, and ontological conditions reflect the continuation of colonial structures and ideologies in "most now-independent but still subjugated nations" (Weiner 2018:3). For example, until recently the concerns of indigenous peoples and grassroots environmental movements from the periphery countries were side-lined at international discussions and platforms on environmental protection and climate change (Bixler 2017; Rashidi and Lyons 2021). These actions reflect the contradictory tendency of "democratic despotism" (Karenga 2003:148) which allows for liberal global governance of climate action yet sustains existing flows of violence and sacrifice along the core-periphery Color Line.

Feminist political ecologists and environmental sociology scholars add nuance to discussions on climate violence. They highlight the degree to which inequalities are disproportionately distributed intersectionally and across multiple social scales. For example, Rocheleau, Thomas-Slayter, and Wangari (2013) link microlevel factors across indigenous communities, (e.g., household and community practices) with macrolevel world-system considerations, (e.g., national and international economics). Further, systems which discriminate based on class and race often intersect with other systems of oppression that disadvantage people based on aspects of identity, for example, gender, sexuality, ethnicity, indigeneity, and disability. Taken together, these intersections create differential access to resources, influence over decision making and ultimately environmental and climate vulnerability (Ryder 2018; Ryder and Malin 2021; Sultana 2020). This can result in the erasure of indigenous knowledge, epistemology, and experiences of climate violence. As noted by Sultana (2022: in press) "extremely uneven and inequitable impacts of climate

change mean that differently-located people experience, respond to, and cope with the climate crisis and related vulnerabilities in radically different ways." Framed within the context of world-systems, global "capitalist patriarchy" often aligns with traditional patriarchies in the peripheral states to impose land reforms and privatization. The result is the marginalization of subsistence systems which create inequalities for indigenous groups in the Global South whose economic vulnerability is intertwined with risks of exploitation and gender-based violence (Shiva and Mies 2014:xiii).

WST and Unequal Assemblages of Time: Slow Violence and Necropolitics along the "Global Color Line"

Temporality is a central feature of the rate of evolution of climate violence. While rapid onset climate violence occurs through conflict and disasters which are increasing in intensity and frequency, much of climate violence is the result of slower, less visible processes. "Slow violence" refers to the effects of environmental violence over the course of many years and decades, often manifesting harms across generations (Nixon 2011). This is opposed to the more immediate displays of interpersonal violence in wars and crime that tend to fascinate public discourse and create a spectacle (ibid). Instead, acts of slow violence are unnoticed and perpetrators benefit from the invisibility of harm inflicted across long time periods. The consequences of many forms of environmental and climate pollution do not manifest until years or decades later, obscuring cause and culpability over time. Hence, time creates slow violence by generating visibilities and invisibilities of certain things or issues, and by creating differences in experiences of climate change. This allows powerful groups and countries to insulate themselves from climate change risks at the expense of others. Together these enable Necropolitics along the global color line.

First, time renders certain things (in)visible. Invisibility is implicit in the use of the phrase "periphery." It can suggest a removal from the core sites of production, consumption, and capital accumulation in the global economy and the power of the interstate system (Wallerstein 2004). Invisibility can also mean being in the periphery of vision. Peripheral countries can be locations where the extractions of the capitalist system have resulted in the fabulous wealth of the core countries. However, this process occurs out of the line of vision and obscures the extractive character of capitalism that relies on the appropriation of surplus value from the periphery.

The obscuring of vision is implicit when Mbembe (2019:22) refers to the formation of Western democracies as possessing a "solar" and a "nocturnal" body. The historiography of the West largely treats the growth of its democracies as inevitable for liberty and equality for all people. However, this leaves

out the nocturnal body of democracy in the West, where wealth and development that marked the economic ascendancy of the core countries was due to the free labor from slaves and colonial expansion. This is elided from the narratives of the development of Western democracy which often operated within the borders of a "pro-slavery state" (Mbembe 2019:22). Reference to nocturnality indicates the obscuring of colonial arrangements of slave-owning democracies, exacting violence under the cover of darkness that marked the creation of these democracies at the core of the capitalist world-system. Likewise, narratives of climate action inadequately acknowledge historical carbon emissions by core countries which are overwhelmingly former colonizing states in the West ~~and~~ that disproportionately export climate violence to their former colonies in the periphery. Additionally, some green activists in the Global North are supportive of, or unconcerned with, the repatriation of pollution and waste from their own countries and exiled to periphery countries (Nixon 2011). There can also be impositions of conservation efforts on countries in the Global South that do not account for the populations that are moved away from lands (Narchi 2015).

Second is the role of time in the differential experiences of climate change and the respective urgency placed on them. Sociological literature highlights the concept of "social time," where effects of actions occur at different speeds for people relative to where they inhabit (Bergmann 1992:83). Time is experienced differently in different cultures. Therefore, social time is visible not through the individual consciousness but through the rhythms of shared activities of the collective (Durkheim 2001). Mead (1964) sets out a theory of time and society that is constituted through human action that ties the past, present, and future horizon together as opposed to existing in a pre-constituted time. This means that how time is experienced determines how violence is framed. WST itself views time and space as linked and continuously shaping social realities (Wallerstein 2004). Hence, populations in the periphery and the core experience the speed, spatial distribution, and intensity of climate violence differently.

Climate change is itself, of course, a form of "slow" violence. The climate crisis can be traced back to geological timescales through the Anthropocene to the invention of the steam engine and the Great Acceleration of the mid-twentieth century (Nixon 2011). The harms of the climate crisis are experienced now and will continue to worsen. The IPCC notes that an overshoot in global warming above 1.5°C will disproportionately affect regions with high vulnerability such as sub-Saharan Africa (IPCC 2018). Slow violence therefore emerges from the disproportionate experience of the manifestations of climate breakdown across different continents.

Time therefore cumulatively exacerbates the causes and effects of climate change. Climate change risks are "influenced by historical and ongoing patterns of inequity such as colonialism, especially for Indigenous Peoples and local communities" (IPCC 2022a:12). This matches Sanders' (2015:14) thesis that the experience of vulnerable populations is "Slow Violence Fast-Forwarded." Hence, vulnerable collectives experience "slow" climate violence as a much more rapid occurrence than the core countries. Other scholars associate slow violence with "slow observation," where those affected tap into their own "memories of their landscapes changing over time" (Davies 2018:1544). Those who are affected by this slow violence are therefore likely to remain disadvantaged and marginalized (Anderson et al. 2020). Scholars adopting Nixon's concept of slow violence see it as a dimension of climate justice (O'Lear 2016).

The effects of climate change are determined by differences in capacity to respond to these risks across regions (Dehm 2020). The number of deaths from multiple climate hazards are 4.4 times higher in low- and middle-low-income countries than in high-income countries (Formetta and Feyen 2019). Guo et al. (2018) project a 2000% increase in heat wave related excess deaths in Colombia for 2031–2080. This contrasts with a projected 500% increase in Canada under a high-emissions scenario (ibid). These examples demonstrate how climate change is more visible in the periphery as compared to the core. Hence, climate violence shapes the social realities of the periphery where this violence is closer and more visible, than for the majority who live in the core.

Slow climate violence in the periphery can be understood as occurring through a historical collusion between states and actors in the core and complicit actors such as governments in the periphery. Nixon states that both local environmental resistances against environmentally degrading ventures or "green" projects that displace indigenous peoples show a distinction between "official" and "vernacular" topography (Nixon 2011:17). This recreates Mbembe's (Mbembe 2019:79) description of colonial occupation as the "seizing, delimiting and, asserting control over a geographical area-of writing a new set of social and spatial relations on the ground." Markets are assured through the low cost of land, water, and mineral rights in many African countries (DeBoom 2021). This generates other forms of collective violence that evolve over reduced timescales, for example, the seizure of space and the policing and securitization that accompanies the growth of industries in the periphery (Crook, Short, and South 2018). When paired with the border regimes of core nations against climate refugees, the outcome is a co-existence of spectacular and slow violence. In Peru in 2009, confrontations between indigenous protesters and armed police over the privatization of ancestral land resulted in 58 fatalities over the course of 2 days. Thirty-six of those killed were indigenous protesters (Lynch, Stretesky, and Long 2018). Such a "relation of enmity" can

form the "normative basis of the right to kill" (Mbembe 2019:70). Conventionally understood, official interpersonal violence against environmentalists or indigenous activists can exist alongside the carbon emissions of slow climate violence that follow the implementation of extractive industries.

Slow violence can therefore be seen as a strategy of Necropolitics. Colonial logic has often engaged in a moral economy of the distribution of harms, violence, and sacrifice (Mbembe 2003, 2019). Ability to dictate who can live and die is the ultimate expression of sovereignty (Mbembe 2003, 2019). This can exist as a "permanent spatial arrangement" (Mbembe 2019:67). The Anthropocene may further solidify the fact that humanity cannot reverse the climate crisis but only mitigate it. These threaten to make the spatial arrangement of climate violence between core and periphery permanent.

In the context of climate change, Necropolitics is pursued both directly (as described above), and indirectly, where the death of some people is seen as an acceptable sacrifice for maintaining capital accumulation. These preventable deaths are a sacrifice for the success of emitting industries and enabled through policies. Peripheral populations are therefore sacrificed through climate solutions which fail to address the motor of capital accumulation that drives carbon emissions. Thus, core countries and elite actors use their power to enact Necropolitics by enacting slow, surplus climate violence on marginalized populations, particularly across the periphery.

The Perpetuation of Climate Violence through the Pursuit of Climate "Solutions"

Emission reductions are a conditional requirement for addressing climate change. Although the 6th IPCC Assessment Report finds that some countries' emissions have been steadily decreasing over the past 10 years, this follows more than three decades of a steady increase in global emissions (IPCC 2022b). The past two decades have seen an evolution of emission strategies from those that involve binding emission reduction targets for developed countries (Iacobuta et al. 2018) to voluntary and non-binding commitments by all countries (Seo 2017) that seek to "achieve a balance of emissions by sources and removals" (UNFCCC 2015:Art 4.1). Perhaps unsurprisingly, progress on emission reductions has been slow. IPCC reports state that "present day concentrations of atmospheric carbon dioxide... are at higher levels than at any time in at least the past two million years," (Gulev et al. 2021:3). One of the reasons for the failure to achieve emission reductions in absolute terms is the limited commitment by countries. For example, despite being the highest historical emitter, the United States has previously failed to commit to binding emission reduction targets (Nwankwo 2019), implement institutional

mechanisms for emission reduction (Smead 2022), and meet international commitments for financial support to developing countries (Bowman and Minas 2019).

The failure to effectively reduce emissions drivers can be attributed to "green capitalism" (Mann and Wainwright 2018:99). In this vein, proponents of the ecological modernization paradigm maintain that modern institutions and capitalism are more than capable of countering environmental degradation and climate change without sacrificing economic growth (Mol 2002; Mol, Spaargaren, and Sonnenfeld 2013). This approach relies on the market as the mechanism through which states, firms, and civil society engender wider ecological consciousness and technical solutions to climate change (Mol et al. 2013). This approach has guided dominant climate solutions which continue to emphasize financialization of climate change through technical and market-based solutions. However, such solutions tend to protect capital accumulation and encourage complacency as regards fundamental political and social changes needed to address the shrinking time-scale of climate collapse (Foster 2012; York, Rosa, and Dietz 2010).

Existing adaptation efforts promote actions that mainstream climate resilience into development planning to generate and protect livelihoods and wellbeing (Scoville-Simonds, Jamali, and Hufty 2020). However, adaptation solutions promoted by international organizations do not represent country priorities and usually fail to address, and even increase, the vulnerability of countries or communities (Eriksen et al. 2021; Vink and Schouten 2018). Some adaptation solutions also fail to recognize and adequately reflect "globally differentiated responsibility" for climate change (Scoville-Simonds et al. 2020:3). Instead, current climate action pathways promote "business as usual" approaches to development, maintaining current levels of structural power arrangements that have led to increasing emissions and vulnerability. These actions also reflect Du Bois' "democratic despotism" (Karenga 2003:148) that marks the interaction of majority-white nations of his time with those of the nations of Africa. There is an appearance of democracy in a forum where core countries have the most influence in framing what climate change is and what its solutions should be.

Climate action, through both adaptation and mitigation, is also achieved through experimentation and financialization. Both transfer the risks of climate change and their solutions to the Global South while extracting the benefits to the Global North (Sovacool et al. 2019). Furthermore, climate finance for mitigation seeks to build ideal market conditions in periphery countries that can attract "green" investors, most of whom are from core countries (Bracking 2015). Previous approaches from carbon markets, which still characterize the current landscape of climate action, have resulted in dispossession and

accumulation, usually from the Global North to the Global South but also within states (Sovacool et al. 2019). Paprocki (2018) discusses how successful adaptation in Bangladesh is framed as involving increasing urbanization and export-based production, which usually benefits core countries through supply of cheap garments and frozen shrimp. Sovacool et al. (2019) also show how renewable energy development in Mexico and South Africa results in processes that enrich external corporations as opposed to supporting local adaptation and sustainable development processes. These solutions are often out of step with the actual pace of intensification of climate change and what this means for climate overshoot. This again points to the unequal assemblages of the temporal experience of climate collapse across core and periphery. An insistence upon orthodox solutions to climate change fail to recognize the delay that these proposals mean on effective climate action for peripheral countries, and ultimately result in racialized, classist climate violence.

The financialized solutions to climate change fail to adequately interrogate how the market continuously promotes the interests of major donor countries. It is ineffective in the face of imminent tipping points. These solutions focus on accumulation and expanded Gross Domestic Product (Hickel and Hallegatte 2022). In Africa, solutions presented under the Clean Development Mechanism did not result in tangible benefits for countries on the continent, and instead created subsidies for for-profit activities that benefited multinational corporations based in core countries, mostly in Europe and the United States (Bond et al. 2012). This sustainable capital is then invested elsewhere in carbon intensive sectors of the economy (York, Rosa, and Dietz 2010). The financialization of responses to climate change has led to more rent-seeking behavior as opposed to prioritization of tangible solutions for averting climate collapse. Financialization of solutions to climate change, for example, through solutions based on carbon markets, are unlikely to result in absolute reductions in emissions (Jerneck 2017). These proposed solutions implemented in collaboration with State elites in periphery countries offer "narrow opportunit[ies]" for development, (Du Bois, quoted in Karenga 2003:142) as well as exploitation that accompanied the experience of nations of color. This demonstrates how technical fixes, usually proposed by core countries, do not contribute to, and even impede, climate justice (Gross 2022).

What we see is a weakness in the capacity for international global mechanisms to enable tangible progress on climate change. Instead, actions touted as solutions facilitate the unequal exchange of surplus accumulation and violence. States' power determines whether their interests are met in international negotiations and governance of climate change (Betzold 2010). Core countries often lead in formulating these responses, mostly through their collective power and influence at international fora for climate change decision making. The

outcomes are solutions that favor the interests of core countries which have historically constructed the climate crisis and response (Bonneuil and Fressoz 2017). Instead of reparations or any form of redress for harms caused by the core's emissions, what is offered are Green Keynesian solutions for peripheral countries. The latter must also engage in mitigation despite holding a minimal amount of historical carbon emissions (Bonneuil and Fressoz 2017; Mann and Wainwright 2018).

Hence, climate violence is not only enacted through activities which cause climate change in the first place. It is further perpetuated by the pursuit of market-based, "business as usual" solutions to the ongoing climate crisis. These strategies fail to challenge endless capital accumulation and subsequent carbon emissions. Pursuing climate solutions that align with a capitalist economic system means that these solutions too will be bound by the need to seek opportunities for extracting surplus value, market growth, and capital accumulation. This assures the continuous recreation of "green" capitalism and surplus climate violence. In so doing, political interventions for adaptation and mitigation will exacerbate suffering in the periphery, where there are fewer resources for adaptive capacity (see Mann and Wainwright 2018).

The relationship between solutions for climate change and the system of racial capitalism they endorse mirrors the feedback loops that intensify the physical causes of climate change. Feedback cycles increase in high CO_2 emission scenarios. These then result in further emissions that drive global warming (IPCC 2021). In a similar feedback loop, capital can cause climate change, then it can view it as an investment or reinvestment opportunity and find new investment opportunities in the crisis that it itself created. This further increases the pace of climate change, creating an *invisible treadmill of climate violence*. This means that both decision maker and decisions around carbon emissions, GDP growth, capital accumulation and the rise of carbon emissions in the pursuit of climate solutions need to be made more wholly visible and critically assessed.

Conclusion

This review recasts the main insights of WST through the Color Line to unpack the generation of racialized, surplus climate violence. It highlights two axes of slow climate violence: (a) violence emerging from the responsibility in causing climate change; and (b) the less commonly highlighted but equally important slow violence, resulting from climate change solutions that prioritize market-based solutions and capital accumulation. Both of these are perpetuated by the Global North against the Global South. The outcome is the export of surplus climate violence from the former to the latter; an act that is necropolitical. This reorientation sets up a moral economy of development and actual

sacrifices amongst populations of different states across the Global North and South. This favors the economic imperatives of the former at the expense of the lives and livelihoods of the latter. This review article indicates directions for future research on the production of slow climate violence that refocuses attention on the "violence of the powerful" (Bonds 2016:16). This research also contributes to other emerging literature on critical climate justice that highlight the intersection between climate change, race, coloniality and economic justice (Allan, Lemaadel, and Lakhal 2022; DeBoom 2021).

How climate change is understood today is predominantly informed by research from natural science disciplines. Emerging research from the social sciences is based on economics and political science, with limited input from other disciplines such as sociology and history. However, research rooted in sociological concepts can highlight the role and nature of power in determining climate justice. Klinenberg, Araos, and Koslov (2020) notes that the role of sociological framings in climate change research is to identify the conditions that make social and political transformations likely. This is one aspect that is increasingly becoming important in research on climate change and climate justice. Sociologists have previously contributed to understanding climate justice, for example, by framing it not just as an opportunity, but also through a framework of both material and immaterial loss (Elliott 2018). This research advances these conversations by outlining the different facets of slow violence that encompass more than the violence emerging from exploitation of resources that cause climate change. Although the emphasis in this article has been on the racial, geopolitical, and economic inequalities that underlie experiences of climate change and climate justice outcomes, it is important to note that other forms of inequalities, for example, age, gender, sexuality, and disability also determine climate violence for many other groups.

Future research that builds on this should focus on understanding the role of the state in sanctioning slow violence. It should also further elaborate how states can pursue more transformational, justice-centric climate action while balancing between domestic and international priorities for averting climate and societal collapse. Lastly, thinking deeper about climate justice and slow violence within the framework of WST, the Color Line, and Necropolitics requires consideration for the role that intrastate and interstate systems play in determining the nature and extent of slow violence and its effects on climate justice. Future research can look at the manifestation of these inequalities within states and across states, and their drivers.

Beyond research is the need to implement action to reverse the capital accumulation that has led to and exacerbated the climate crisis. Core countries should provide reparations to periphery countries to enable responses to the climate crisis. Core countries should also transition from racial capitalism toward

greener economies that deemphasize growth and rely less on extraction from the periphery (see Hickel and Hallegatte 2022). However, it is naive to believe this can easily be achieved. This is more likely to be a dialectical process relying on social movements in the core and periphery as well as radical political and cultural changes. One thing is certain, the effects of the climate collapse are becoming more apparent in the Global North as well as the South. Overdue reconstructions of society and world politics that are in line with climate justice are still yet to be undertaken.

Data availability statement

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

ENDNOTES

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