CHAPTER 6

From Petty Fraud to Global Injustice: Climate Ecoviolence

In many ways, and from the vantage point of future generations, present action and lack of action around climate change will most likely constitute the gravest of transnational environmental crimes … Yet, things continue much as they have, the status quo is maintained, and the harms add up. White, 2012a: 2

INTRODUCTION

Is Volkswagen a transnational environmental criminal organization? It would not normally spring to mind as such, but its self-admitted efforts to dupe consumers and governments by using “defeat devices” to fool regulators were certainly transnational environmental crimes. Not a big surprise: mega-corporations have the technological means to dupe the public and regulatory agencies alike, concealing information with the misapplication of software. Put starkly, the company was producing cars with rigged emission measurement technology in Europe and selling roughly 11 million of them across the globe. This worked by … programming engine management software in some diesel cars to detect when the vehicles were being tested by regulators and then to turn on emission controls only when being tested on treadmills by government authorities … the cheat device is not actually a device but rather several lines of software code in the computer that controls the engine’s exhaust system … Consequently, the vehicles seemingly operated within emission
control parameters; yet cars equipped with these devices would emit more than 40 times the emissions when back in normal driving conditions and actually running on the road. (Cavico and Mujtaba 2016)

A considerable level of conscious deception (at a mid-management level, apparently) is on display here, and took place within the company’s ongoing efforts to self-brand as responsible and safety-oriented (and imagine the lack of imagination regarding the parameters of what constitutes safety, in an era when we possess conclusive evidence of the deleterious impacts of air pollution and climate change). Notwithstanding the hefty (but not back-breaking) fines the company has paid in the United States, Canada, and elsewhere, this has become another standard case of corporate irresponsibility and regulatory ineffectiveness in the automobile industry, part of a sorry legacy that includes Ford, Toyota, Fiat Chrysler, and others (Whyte 2016). But as a specific climate crime, one can argue that the overall impact of the Volkswagen debacle is even more significant, since it begs the obvious question: What other acts of deception have been committed regarding climate fraud? How many companies, armed with the ability to manipulate emissions recordings with subtle code adjustments, have or will purposefully misrepresent their output? For that matter, can we really trust governments to report accurately as part of their quest to fulfill the goals of the Paris Accord? Of course, the issue of regulatory verifiability affects all kinds of pollution, but with climate change we are, arguably, looking at a fundamental violation of global environmental justice with each transgression. We have only just begun to grapple with the immense challenges, conceptual and practical, of climate justice, though entire Ph.D. programs are now devoted to the theme.1

In 2001, the Intergovernmental Panel on Climate Change (hereafter IPCC) produced a landmark report on the predicted impacts of climate change (all IPCC reports are landmark, of course, but this one had an especially ominous ring to it). The long list of likely effects included species extinction and loss of biodiversity, loss of food security and farming capacity; rising sea levels, especially harmful to coastal communities and small island states; warmer surface temperatures; frequent

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1 Most notably perhaps Reading University in the UK, with support from the Leverhulme Foundation, has set up the Leverhulme Trust Doctoral Programme in Climate Justice.
heat waves; more intense storms (hurricanes, tropical cyclones); increased intensity of floods and droughts (IPCC 2001). It is hard, twenty years later, to find empirical fault in these predictions. We are watching them unfold in live time.

However, it could be suggested that an unfortunately unique phenomenon to this century is the advent of what we may formally call “climate crime”, though of course many would argue that one of the more preposterous and deadly crimes of the previous century was the steadfast refusal of the fossil fuel industry (and automobile and concrete/cement and shipping and airline industries and others) to acknowledge the considerable impact their profit-driven and progress-justified activities were having on the Earth’s climate (see Oreskes and Conway 2012). We may discuss climate crime in several veins, all of which can be subjected to political economy-driven explanations, environmental security concerns, and human security consequences.

At the level of small larceny, for example, is the contemporary crime known as carbon fraud, which entails misleading people who have parlayed their personal sense of guilt over climate emissions from flying to sandy beaches and UN conferences and other indulgent activities into the purchase of carbon offsets, and using these funds in ways that do not offset carbon emissions but enrich the misleader. This is, pathetically enough, increasingly common in occurrence in various guises.² However, consumers are becoming wiser to the possibility that their money could be taken for a non-offsetting ride. For example, the International Air Transport Association (IATA) has teamed up with Xpansiv CBL Holding Group, a commodity exchange company, to provide a common marketplace for offset purchases called the Aviation Carbon Exchange. The legitimacy of this marketplace should be fairly tight, which is a good public relations move for an industry with a disproportionate impact, per

²See INTERPOL’s Environmental Crime Programme, Guide to Carbon Trading Crime, June 2013, p. 11: Unlike traditional commodities, which at some time during the course of their market exchange must be physically delivered to someone, carbon credits do not represent a physical commodity but instead have been described as a legal fiction that is poorly understood by many sellers, buyers, and traders. This lack of understanding makes carbon trading particularly vulnerable to fraud and other illegal activity. Carbon markets, like other financial markets, are also at risk of exploitation by criminals due to the large amount of money invested, the immaturity of the regulations, and lack of oversight and transparency.
consumer, on greenhouse gas emissions (commercial aviation is responsible for roughly 2% of global carbon emissions); the phenomenon of “flight shaming” is taking hold. This is the operative arm of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), which was approved by the International Civil Aviation Organization (ICAO); it is expected to provide “more than $40 billion in funding for climate projects, and offset 2.6 billion tons of Co2 emissions between 2021 and 2035” (Rucinski 2020). The ICAO will determine which environmental projects benefit from the funds collected. Such initiatives may help deter the crime of selling false carbon offsets.

At the other end of the scale, and keeping with our discussion of ecoviolence in Chapter 1 of this book, the concept of climate crime can evoke a much broader debate about whether the climate crisis and the call for climate justice impart new legal obligations upon industrialized states (including the BRICS), leading to a searching discussion about defining crime in the modern era. For example, small island states have been pursuing international legal action, claiming legal negligence on the part of large emitters, for over a decade now. Small island states are animated by the abject reality that rising sea levels may well render them non-existent in the near future. Clearly, at either level of this spectrum, transnational environmental crime is not just about wildlife crime or hazardous waste dumping today, and climate change is an example of how the conceptual theatre has evolved. There is certainly a pronounced overlap between climate crime and climate injustice, even if we take the narrowest, minimalist perspective on what constitutes the former. Selling false carbon offsets not only rips off the misled purchaser; it also denies those most affected by climate change (who can least afford the costs of adaptation) whatever miniscule portion of relief those offset purchases may have procured had they been applied honestly (and intelligently—many carbon offsets are overhyped nonsense in the first place). Again, as with all the other transnational environmental crimes discussed in this book, there is a chain of corruption usually associated with these more base petty crimes: often, the offsets are misapplied at the source of purchase, but there have been cases recorded where the middleman is the one misled and what are supposed to be donations to replanting in deforested areas are simply donations to extant Christmas tree farms and similar projects. On a much larger scale, the Clean Development Mechanism, Joint Implementation, REDD+, etc., have been criticized for rewarding polluters for committing to investments they would have made,
or certainly should have made, regardless. For example, should extractive industries be rewarded with carbon credits for ecological restoration of the areas they have rendered to a condition where restoration is necessary in the first place?

Like pandemics, climate change crises are life-and-death issues. The World Health Organization (WHO) estimates that 250,000 excess deaths per year will be the result of climate change between the years 2030 and 2050 (Honda et al. 2014). Criminologists have even predicted spikes in violent crime as a result of the stressors accompanying climate change, especially in urban regions, at the individual level, but also at the corporate and international levels (White 2012; Agnew 2011). This violence takes on many guises, hidden underneath seemingly innocuous practices and actions, yet the consequences of climate change bear down on the planet and its inhabitants disproportionately. The use of the word violence, or ecoviolence, in the context of climate change may seem hyperbolic, according to corporate interests invested heavily in the fossil fuel economy and the political actors who scoff at claims that the planet is warming and, most importantly, the demand for swift and immediate intervention to mitigate the effects of climate change. The violence unleashed through climate change is ugly, unfortunate, political, epistemic, and, most importantly, structural due to cultural ideologies pertaining to economic growth, development, modernization, and industrialization—to name just a few. The choreography of this violence is distinctly anthropogenic (Solnit 2014), mirroring the design of deregulation, and global laissez-faire environmental politics (Zilney et al. 2006).

**And Justice for All?**

How, exactly, should we use the term ecoviolence, or conceive of environmental harm, when exploring the effects of global warming and the complicity of individuals, governments, corporations, and others? While the use of these terms seems logical and pragmatic when discussing climate change and climate crimes, we must first reflect on how violence and its myriad iterations are discussed in the context of human-induced climate change. An exploration of the themes of justice is equally important in this debate. Justice, we argue, is a capacious term, encompassing social justice (Kasperson and Kasperson 2001), environmental justice (Adger 2001), economic justice (Rosales 2008), and cognitive justice...
Perhaps the climate crisis has induced the emergence of a paradigmatic shift in how we interpret different variations of justice. For example, when speaking to the climate change debate, we must ask who owes whom a duty of care, and should certain actors bear the brunt of the costs of climate change mitigation?

Clearly, there are pronounced disparities between those who shoulder the responsibility of releasing greenhouse gases in the atmosphere, and those who are forced to bear the disproportionate burden of its effects. This is not just a north-south phenomenon based on historic patterns of colonization. For example, Phillips (2019) reviews some of the data on increasing temperatures and argues that Crawley, in West Sussex, England, witnessed some of the hottest days on record in the summer of 2019. The negative environmental impact of aviation is disproportionately affecting the communities located in close proximity to England’s Gatwick airport: aircraft emissions of CO₂ and water vapor at high altitudes create condensation trails which contribute to humid atmospheres, exacerbating the ambient air quality problems, including high nitrogen dioxide levels. Crawley has a high proportion of ethnic minorities, suggesting it fits into a much broader pattern of environmental injustice and relative exposure to health risks discussed in Chapter 1: would this level of air pollution be tolerated in predominately wealthy, white neighbourhoods? At the global level, themes related to justice have played a crucial role and helped animate the United Nations’ Framework Convention on Climate Change, which was established in 1992. The themes of air pollution and climate justice has attracted the dedicated attention of scholars as well. Steve Vanderheiden (2008), for example, calls for “atmospheric justice” through the creation of an international climate change regime based on principles of equity, responsibility, and compensation. Specifically, he examines the merit of liberal egalitarian principles of distributive justice to climate change, reflecting on how an equity-based model and a responsibility-based model might be invoked to mitigate related harms.

While both models feature pragmatic and theoretical strengths, Vanderheiden also proposes what he refers to as an equal-shares approach that applies both equity and responsibility to all stakeholders concerned with reversing the effects of climate change. Vanderheiden’s work on linking issues of distributive justice to the climate crisis unfolding before our very eyes joined various proposals in support of “Climate Justice” a result of the activist energy of international networks, activist groups,
and human rights-oriented organizations. Finally, we would be remiss if we didn’t comment on the remarkable accomplishments of the dauntless young people who filed a lawsuit in 2015 against the US government, claiming the country’s energy policies are responsible for climate change. In 2020, the lawsuit was tossed by the federal appeals court on account of children not having the legal standing to bring such a case against the US government, and the legislative responsibility to form climate and energy policies (see https://www.vox.com/2020/1/17/21070810/climate-change-lawsuit-juliana-vs-us-our-childrens-trust-9th-circuit). This event, however, was a watershed moment for young people disillusioned with the apathy of politicians, bureaucrats and big business, further inspired by awe-inspiring individuals such as Greta Thunberg, the Swedish environmental activist who has gained international recognition for her fight for climate justice.

The IPCC’s fifth assessment report (AR5) recommends that sustainable development and poverty eradication be understood as mutually supportive and co-achievable when discussing climate change (Denton et al. 2014). Justice is also related to concepts of intergenerational, international, and national equity—that is, fairness between generations, fairness between states, and fairness between individuals, respectively (Fleurbaey et al. 2014). Equity is also related to procedural justice and distributive justice, the former referring to formal participation in the decision-making processes around a warming planet and latter relating to how the costs and benefits of climate actions are distributed (Sobrevila 2008; Pickering and Barry 2012; Müller et al. 2009). When reflecting on how the fairness in burden-sharing between generations, and between and within nations is exercised, we must ask how we ensure that global average temperatures do not exceed globally agreed-upon levels, compromising human security, poverty eradication, and sustainable development. While there is a literature dedicated to exploring how climate change heightens risk factors associated with conflict (Lawn 2003; Jackson 2011; Homer-Dixon and Blitt 1998), the precise causal relationship between climate change and violence is harder to establish. Some authors allude to a connection between climate change and social conflict, citing weather aberrations such as extended dry seasons, abnormally high temperatures, and droughts as the source (Agarwal and Narain 1991; Folke 2007; Gallopín 2006; Humphreys 2009; Knox 2009; McShane 2007). Such analyses, however, fail to attach responsibility to those orchestrating climate changes, shifting blame onto the Global South and
their so-called unsustainable practices. While this perspective tends to overlook the climate-related violence of the Global North, there has long been recognition that the wealthy and powerful are responsible for harnessing structural violence through their advocacy of neoliberal capitalism (Bongaarts 2009).

An examination of violence that is structural allows us to reflect on how such violence can be prevented. The IPCC, for example, has created a sense of urgency, declaring that humanity has a small window of ten years or less to avoid exhausting the carbon budget (IPCC 2014). Despite such claims, a “business-as-usual” ethos continues with little interruption, taking precedence over environmental well-being and justice. There remains a reluctance to draw causal connections between climate change and structural violence, and this is precisely where defining violence becomes challenging; recall, Lee (1996) examines definitions of violence and determines that, while there is a consensus among scholars that violence causes harm to people, there is an acrimonious debate as to whether violence must include an act of physical force or not. In this vein, then, we could situate climate change as a violation of “ideal” rules regarding morality and justice in society. If we interpret a warming planet, and its detrimental effects, as a violation of society’s “ideal” rules, it must be included in a definition of violence because it is both harmful and immoral. Relatedly, Jackman (2002) defines violence as “actions that inflict, threaten, or cause injury. Actions may be corporal, written, or verbal. Injuries may be corporal, psychological, material, or social” (Jackman 2002: 405). Such varying forms of violence in social life, the author maintains, includes actions that are not necessarily driven by malicious intent but are nevertheless pernicious to the planet. Was U.S. President Donald Trump’s decision to withdraw the United States from the Paris Agreement on climate change an example of agential violence which violates Lee’s (1996) “ideal” rules, or an example of Jackman’s (2002) actions which are corporal, written, or verbal? Arguably, the decision is an abject expression of either, and the violence it represents will also be structural in nature, impeding the global community’s efforts to help low income countries adapt to the effects of a warming planet.

Clearly, opportunities abound when attempting to link climate change to varying definitions of violence, and nowhere is this more apparent than in the dynamic and highly imaginative works of Soron (2007) and Bonds (2016), both of which lead pioneering research on the structural violence of climate change. The authors suggest that such violence is never
committed with malice and intent, but its impacts are equally devastating in the long run. For instance, the structural violence of climate change is embedded in the system-level structures of global capitalism—namely, the scale of production and consumption in relation to environmental limits and sustainable development. These structures, furthermore, maintain the inequalities upon which capital accumulation, wage labor, and competitive markets rely, continuing to endanger whole ecosystems and entire human communities (Lynch et al. 2017; Stretesky et al. 2014). Bonds’ (2016) research on the structural violence of carbon-dependent corporations is an inspiring attempt to add the term ecoviolence within the broader research on violence, holding the world’s largest fossil fuel companies responsible for anthropogenic global warming.

**CONCEPTUALIZING CLIMATE ECovIOLENCE**

It is precisely at this juncture that we can propose the use of the terms ecoviolence and harm when discussing global warming. Climate change is the direct result of the Industrial Revolution’s transition to a fossil fuel-based, non-renewable carbon economy. This transition ushered in a new era of risk for all of Earth and its inhabitants. The IPCC defines global warming as an

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\text{increase in combined surface air and sea surface temperatures averaged over the globe and over a 30-year period. Unless otherwise specified, warming is expressed relative to the period 1850–1900, used as an approximation of pre-industrial temperatures. For periods shorter than 30 years, warming refers to the estimated average temperature over the 30 years centred on that shorter period, accounting for the impact of any temperature fluctuations or trend within those 30 years. (2014: 31)}
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The scientific data released by the IPCC is alarming; while the intergovernmental body does not conduct independent research, its status as a government and UN-supported international clearinghouse lends credibility to its scientific literature on climatology and related issues in biology, hydrology, oceanography, forests, glaciology, and other disciplines. Its purpose, therefore, is to encourage governments to respond to climate issues based on the methodologically sound research it produces. Conservative in nature, the IPCC’s conclusions regarding the effects of climate change paint a very frightening projection of the fate of
our planet. Such projections even changed the myopic attitudes of some staunch climate change denialists; it concluded that humanity’s dependence on fossil fuels has dramatically increased atmospheric concentrations of carbon dioxide from approximately 280 parts per million (ppm) before the Industrial Revolution to 390 ppm in the twenty-first century (IPCC 2014). (The global average was nearly 410 ppm in 2019.) The disruption of the climate system’s equilibrium will lead to irreversibly destabilizing events such as increases in the planet’s absorption of solar radiation which leads, inevitably, to drastic changes in the chemistry and currents of large bodies of water, threatening remote communities with rising sea levels (Levin et al. 2012). Vidal (2009) estimates that by 2030, approximately 500,000 people per year could lose their lives to the apoc- ylypse of climate change and its four horsemen: floods, droughts, forest fires, and new diseases. The economic costs, on the other hand, could be anywhere between $500 and $600 billion annually.

Humanity is bearing witness to record heat waves, erratic precipitation patterns, dangerously rising sea levels, marine heatwaves, climate-induced biological invasions, and other detrimental climate outcomes. The IPCC’s 2018 report revealed that between 2006 and 2015, 20–40% of the global human population in certain regions of the world experienced warming of more than 1.5 °C above pre-industrial temperatures. The latest report urges the global community to limit warming to 1.5 °C and adapt to the consequences of exceeding that prescribed limit. The report also states that a global paradigm shift is required in order to limit warming to 1.5 °C, drawing upon synergies and trade-offs between processes of mitigation, adaptation, and sustainable development. When speaking to the feasibility of limiting global warming to 1.5 °C, a plethora of dimensions must be considered—some of which include geophysical, environmental-ecological, technological, economic, socio-cultural, and institutional (IPCC 2018). Pushing beyond 2 °C of the planet’s atmospheric temperatures, according to the report, would lead to “considerable” risks to the human population and the disruption of infrastructure networks and the provision of electricity, health, and emergency services (IPCC 2018). Given this scientific knowledge, can we interpret a warming planet as an example of ecoviolence, or the purposeful infliction of harm on ecosystems? If the effects of ecoviolence include ecocide, ecological sabotage, and the deliberate or neglectful harm of ecosystems, human populations, and non-human animals, it would seem hard to deny this conclusion.
Perhaps the most recognizable effect of ecoviolence and harm, ecocide entered public discourse in the late 1960s to describe the detrimental impact of war on the environment. During the “Conference on War and National Responsibility” in Washington, DC in the 1970s, Professor Arthur Galston introduced a framework for an international agreement among nations to ban ecocide (Higgins et al. 2013). The term has also been used to describe the harm inflicted upon the natural environment on a massive scale as a result of breaches of duty of care owed to humanity. White (2018) uses the term to highlight the damage, and destruction, of ecosystems of a given territory. The concept refers to both natural and anthropogenic harms, expanding the definition to apply to a multitude of events impacting the environment. Invoking a harm-defining process, White (2018) explains that ecocide can be used as an ecological concept but also as a legal concept, the former describing natural processes of ecosystem decline and transformation, and the latter addressing environmental damage during war (see Stoett 2000, for an extensive discussion). Relatedly, the term geocide has been used in international law to refer to the right to a healthy environment (Berat 1993), while green criminology explores how certain environmental offenses and transgressions lead to acts of ecocide (White 2011a, 2018). More expansively, ecocide can also refer to the damage inflicted on the environment during peacetime, capturing the quotidian acts of environmental harm perpetrated by everyday citizens.

Conversely, it is these very actors that can mitigate ecocide, reversing the damage they have wreaked upon the planet. Ecocide, like other examples of transnational environmental crimes discussed in this book, is burdened by definitional complexities and different perspectives which add to its ontological breadth. For instance, there are both anthropocentric (Baxter 2005; Eckersley 1992; Fox 1990; Hayward 1997; Kopnina et al. 2018) and ecocentric (Bosselmann 1999; Eckersley 1992; Hettinger and Throop 1999) dimensions of the term ecocide—the former privileging the harms suffered by humans and the latter giving equal weight to the harms suffered by non-human animals, recognizing that the environment has inherent value for its own sake. Recognizing climate change as an example of ecocide, we can begin to see the ecoviolence and harms accompanying a warming planet from both an anthropocentric and ecocentric lens: millions of people have been displaced from their homes because of the ecocide of climate change, while the delicate balance
of ecosystems has been disrupted, contributing to the extinction of a plethora of non-human animals.

As discussed in Chapter 1, another effect of ecoviolence and harm is ecological/environmental sabotage. Not to be confused with “ecosabotage” as an expression of civil disobedience by radicalized environmental activists (Martin 1990), environmental sabotage is a much more nuanced concept which covers the deliberate and intentional destruction of the environment through, to quote Jackman (2002), actions which may be corporal, written, or verbal. Referring back to the United States’ decision to withdraw from the Paris climate accord, we can begin to understand how such actions constitute contemporary manifestations of ecological sabotage. Such acts of sabotage conform to a history of political and bureaucratic apathy to act on climate change. In the early 2000s, Sweden’s environment minister, Kjell Larsson, accused then President George W Bush of sabotage when Bush announced that the energy shortages in the United States during the early 2000s would be exacerbated by the ratification of the Kyoto Protocol—an earlier international treaty dedicated to curbing greenhouse gas emissions. Nearly twenty years later, the same ecological sabotage is taking place by the Trump administration and its disregard to fulfill its moral obligation in tackling climate change. According to the Environmental Protection Agency, in 2017, the United States emitted “6,456.7 million metric tons of carbon dioxide equivalents, or 5,742.6 million metric tons of carbon dioxide equivalents after accounting for sequestration from the land sector” (“Inventory of U.S. Greenhouse Gas Emissions and Sinks”, 2019). Despite such emissions, however, there is tremendous reluctance among big business in the country to mitigate the release of carbon dioxide into the atmosphere.

As a response to the United States’ apathy, environmental groups have banded together to urge lawmakers to revise climate legislation in an attempt to keep global warming below 1.5 °C. Specifically, six major strategies have been proposed: (1) stop all fossil fuel leasing; (2) eliminate all fossil fuel extraction; (3) cancel fossil fuel subsidies; (4) move toward renewable energy; (5) expand public transportation; and (6) include impacted communities and workers in the efforts to curb greenhouse gas emissions (Nuccitelli 2019). Such recommendations, however, fall upon deaf ears because such measures would require global action in reducing fossil fuel consumption and carbon pollution. Ecological sabotage, then, is revealed in data pertaining to the United States’ carbon budget, which has done very little to keep global warming below
The push toward a post-carbon economy based on the elimination of combustion-based power generation, nuclear energy, and large-scale hydro and waste-to-energy technologies is met with intransigence from certain actors that have a stake in protecting carbon-dependent companies. Self-regulatory corporate schemes and market-based mechanisms such as carbon and emissions trading—the cap-and-trade system, for example—fail to address the systemic issues underpinning climate change.

The IPCC (2018) states that governance consistent with limiting climate warming would entail a political economy of adaptation and mitigation—both of which would enable and accelerate systems transitions; behavioral change; and innovation and technology deployment. In particular, an international framework dedicated to climate change mitigation would encompass multilevel governance among non-state actors from industry, civil society, and members of the scientific community; coordinated sectoral and cross-sectoral policies to strengthen multi-stakeholder partnerships; global-to-local financial architecture enabling access to technology; improved climate education and greater public awareness; improved climate monitoring and evaluation systems; and international agreements that address equity and the Sustainable Development Goals (SDGs) (Kates et al. 2012). Mitigation suggests drastically reducing our production of CO₂ and other greenhouse gases, while adaptation refers to preparing humanity to live with the negative impacts of climate change (Kates et al. 2012; Newell and Mulvaney 2013). We are witnessing both technical and political adaptations through the transformation of our relationship with nature and the transformation of social relations among people, respectively. Whether it is through the collective march toward the reliance on clean energy sources and the creation of carbon-capture and sequestration technologies, or the use of conflict resolution mechanisms to contain, avoid, and de-escalate violence within and among nations, mitigation and adaptation hold tremendous promise in saving humanity from the perils of climate change (Pelling 2010). However, the hope for survival through these measures is often diminished and challenged by the ascendency of market-based schemes which, according to green criminologists, serve as a meticulously orchestrated example of ecological sabotage, undermining intergenerational equity and the aforementioned climate-preserving efforts (Higgins 2010).

The disproportionate impacts of climate change are key to this discussion. Leonard et al. (2014) project that a +0.5 °C increase in
global temperatures will produce extremely negative effects on human health, increasing heat-related morbidity and mortality and ozone-related mortality. The authors also suggest that urban heat islands will amplify the impacts of heatwaves in cities, increasing the risk of undernutrition and vector-borne diseases, such as malaria and dengue fever. Warner et al. (2010) highlight how climate change leads to massive dislocations, citing a study from Columbia University’s Centre for International Earth Science Information Network, which predicts that 700 million climate refugees will embark on a mass exodus by 2050. Specifically, a projected 22 million Bangladeshis will have to leave their homes in Bangladesh by 2050 because of climate change. Consider, also, the Pacific Island nations, home to an estimated 7 million people, and the current plans underway to relocate them beyond the reach of rising sea levels. The violent displacement of these people is just the beginning of what Parenti (2011) refers to as “the catastrophic convergence”—that is, the intersection of climate change with already-existing crises of poverty and violence. This collision of political, economic, and environmental disasters serves as a litany of examples of the ecoviolence and harm of climate change (on the special vulnerability of women after climate-related/natural disasters, see Masika 2002; Enarson 2002).

The deliberate or neglectful harm of ecosystems and non-human animals in the context of climate change is also extremely disconcerting; the risk of species loss has garnered the attention of various actors investigating the ramifications of a warming planet. For example, the IPCC (2018: 37) concludes that “the number of species projected to lose over half of their climatically determined geographic range at 2°C global warming (18% of insects, 16% of plants, 8% of vertebrates) is projected to be reduced to 6% of insects, 8% of plants and 4% of vertebrates at 1.5°C warming”. Also, biodiversity-related risks such as forest fires, extreme weather events, and the spread of invasive species, pests, and diseases are heightened through climate change, pushing vulnerable species to the brink of extinction. Hamann and Aitken (2013) provide a comprehensive review of the effects of climate change on wildlife: fatal synchronized infections; destruction and fragmentation of habitats; altered non-human animal behavior such as the premature laying of eggs, disturbed hibernation patterns, and loss of nesting beaches—to mention a few. Sea temperature changes will also affect certain ecosystems: kelp forests and coral reefs, unlike plankton, do not have the ability to migrate to higher latitudes and, therefore, experience high
rates of mortality and loss. In fact, a vast majority of tropical coral reefs are expected to vanish if climate change is not mitigated (Barr 2006; Goeminne and Paredis 2010; Jamieson 2013). The vulnerability of fisheries and aquaculture, then, is heightened under climate change, especially due to ocean warming and acidification. Small-scale fisheries in tropical regions, especially, have been disturbed because of habitat loss and the decimation of coastal ecosystems as a direct result of increasing global temperatures. Both vulnerable human populations and biota are therefore markedly threatened by climate ecoviolence.

The pioneering work of White (2009, 2013, 2018) has paved the way for exploring the criminal dimensions of climate change; he suggests that public discourse regarding climate change ignores the multifarious roles of “carbon criminals”—that is, “a wide range of actors, from farmers and tourism operators through to national transportation firms and individual consumers” (White 2018: 100). When speaking to corporate-induced climate change, White (2018) argues that the very raison d’ètre of any corporation is to advance the interests of shareholders. This means that executives and managers are contractually obliged to put the corporation’s best interests first, even to the detriment of the environment and human and non-human populations. White (2018) also notes that there are several “legal fictions” that facilitate corporate wrongdoing. They are as follows: (1) registered corporations are seen as separate legal entities, acting in their own self-right, (2) corporations cannot be found guilty of a criminal offense, and (3) corporate wrongdoing occurs with impunity due to the structured, criminogenic nature of the corporate bodies. Such “legal fictions”, according to White (2018), need to be further analyzed when considering the criminal status of an operating corporation, the specified responsibilities of corporate managers, and the role of shareholders and their potential complicity in climate change. White (2013) also observes that climate change is exacerbating global divisions between those at most risk and those at least risk, creating what he refers to as a “climate divide” which highlights inequitable global social relations between rich consumer societies and poor and developing nations. Such a divide speaks to the ecocidal tendencies of climate change, but also the criminality of climate change and its devastating effects on the planet.

Kramer and Michalowski’s (1991) research on state-corporate crime is useful here, as it sheds light on the functional interdependence
between states and corporations. The authors propose four conceptual and theoretical innovations: state-facilitated corporate crime, state-initiated corporate crime, corporate-facilitated state crime, and finally, corporate-initiated state crime (Kramer and Michalowski 1991; Kramer et al. 2002). State-initiated corporate crime refers to when the government of a state employs a corporation and that corporate entity engages in organizational deviance, with the tacit approval of the government; state-facilitated corporate crime occurs when a government’s regulatory agencies fail to restrain organizational deviance due to collusion between corporate and governmental actors or shared economic goals; corporate-initiated state crime unfolds when corporate bodies utilize their economic power to coerce governments to adopt deviant behavior; and finally, corporate-facilitated state crime is committed when corporate bodies enable governments to engage in various forms of criminality, or when they fail to inform the international community of a government’s malfeasance. If we consider, for example, how state-corporate crime relates to climate change, we begin to see how big business’ reliance upon dirty energy sources is facilitated by governments, whether it is through tacit approval to continue engaging in harmful business practices or the failure to regulate carbon emissions. White (2009, 2012, 2018), Kramer and Michalowski (1991), and Kramer et al. (2002) are certainly not the first to link climate change to criminality. Consider Carter and Woodworth’s (2018: 25) contention that the lack of media coverage in the U.S. and Canada of the signing in 2015 of the Subnational Global Climate Leadership Memorandum of Understanding to limit warming by 2050 to 2 degrees celsius is criminal behavior of the powerful:

There is no benign explanation for a full media blackout of a significant global development that was heralded by the United Nations Secretary-General. This blackout goes far beyond ignorance or negligence. It is a willful obstruction of public knowledge of the extraordinary extent of global efforts to combat the greatest existential threat of all time by changing business-as-usual. We define this willful, methodical blocking of vital survival information as an unprecedented crime against life on the planet.

Such rhetoric signals a change in the way we approach climate change from both a strict legalist approach and a social legalist approach (Situ-Liu
and Emmons 2000). White (2018) asserts that three questions typically asked when exploring the legal dimensions of climate change relate to: those who disproportionately contribute to the problem of global warming; their foreknowledge of the effects of the release of greenhouse gases; and the ability and responsibility of these polluters to pay for the damages associated with their activities. In response to such pressing questions, sophisticated metrics and matrices have been developed to quantify harm and calculate compensation. Weisbach (2010), for example, explores how tort-law principles can apply to past greenhouse gas emissions. Relying on data gathered by the World Resources Institute’s Climate Analysis Indicators Tool (CAIT), the author reveals that responsibility for greenhouse gas emissions is spread among developing and developed countries and this produces some ethical and legal considerations. The first consideration, of course, is how to measure responsibility. Simply put, most data on greenhouse gas emissions cannot be used to assign culpability to actors because such a decision may end up being applied to poorer nations in a discriminatory manner. Second, while tort law normally requires a close connection between victims and injurers, climate change does not feature such a connection, as victims of climate change, for the most part, are unborn generations and those responsible for a warming planet are now deceased or will not be around when new generations inherit this planet and its climate-related issues. Finally, considering the data on greenhouse gas emissions, tort-based arguments may produce highly inequitable distributive consequences on many poor nations that are high emitters. The ethical considerations here are the potential of tort law imposing crushing obligations on poor countries, negatively affecting their way of life.

While Weisbach (2010) paints a rather bleak picture when attempting to apply tort-law principles to climate change, he does offer some theoretical alternatives to tackling climate change—namely, the principle of strict liability notion. Using this approach, he argues, legal regimes would calculate the start date of all greenhouse gas emissions by a company, for example, and apply strict liability retroactively and prospectively, while determining “offsetting benefits” created by greenhouse gas emissions. The complexities of applying a strict legalist approach to climate change are captured in attempts to measure “offsetting benefits”—that is, the benefits that the victims receive as a result of the same act that caused the harm. In the context of climate change, we can, surely, identify some of the benefits of burning fossil fuels, including agricultural
production, transportation, winter heating, and many others. Keeping this in mind, the theoretical application of the strict liability notion to climate change must be weighed against pragmatic considerations and the feasibility of doing so. White (2018) recognizes the potential of the strict liability approach, advancing a sound argument in favor of identifying climate change as a “strict liability” offense. For White, the excessive release of greenhouse gases should be prosecutable regardless of the intent of the perpetrator or, conversely, subject to a standard of mens rea which considers the intent, recklessness, and foreknowledge of the effects of greenhouse gas emissions. This argument echoes Higgins’ (2010) contention that ecocide—climate change, in particular—should be interpreted as a crime of strict liability because of the considerable scale of harms associated with a warming planet. Strict liability, therefore, should be assigned to the governments and corporations behind human-induced climate change, criminalizing their ecoviolent and harmful practices. We can witness a clear case of strict liability when examining the illicit market of illegally produced chemicals that are detrimental to the ozone layer and the climate.

**Chlorofluorocarbon Trade**

The behavior of select companies responsible for the production, distribution, sale, and use of chlorofluorocarbons speaks to the wider structural circumstances and economic conditions in which they operate. Transnational state-corporate synergies create a global market where the promise of tax revenue and job creation may lead to unethical and unsustainable business practices. Moreover, powerful social interests may mask the ecoviolence and harms associated with the burgeoning black market of harmful chemicals. In 2018, the Environmental Investigation Agency (EIA) discovered that certain regions in China were using CFC-11 in the production of plastic foams, a substance used predominantly for building insulation. A chlorofluorocarbon (CFC), CFC-11 is one of the most dangerous chemicals responsible for the holes in the ozone layer of the Earth’s stratosphere. When the stratospheric ozone layer is depleted, ultraviolet radiation affects all of humanity, leading to cataracts, skin cancers, and suppression of our immune systems (Zaelke and Ramanathan 2018). This particular chemical was banned under the 1987 Montreal Protocol, a global agreement to protect the stratospheric ozone layer by eliminating the production and consumption of ozone-depleting
substances (ODS). The Protocol has received support from a worldwide network of monitoring stations which, among other tasks, provides data on concentrations of CFCs in the atmosphere across the globe. When anomalies in the concentration of CFCs were reported to EIA, a comprehensive investigation revealed that the Chinese chemical industry ignored such international agreements. What is more alarming is the fact that China accounts for 70% of the world’s production of foam, most of which rely on the use of CFC-11. This chemical produces a global warming effect and has a climate impact equivalent to 16–20 coal power stations (Stevenson and Dryzek 2012; Darby 2018). Why would an otherwise rational and reputable company in China continue to use such dangerous chemicals?

For Darby (2018), the answer is quite clear: CFC-11 serves as a cheaper substitute for more expensive and sustainable chemical products. In China, the illicit market for such noxious substances is growing, as companies responsible for a range of products—everything from foam insulation to refrigerators—are using these banned chemicals as a cost-cutting measure. The continued production, and use, of CFCs is cause for concern because the Montreal Protocol banned developed countries from using these substances in the 1990s and guided the developing world on phasing out CFCs by 2010. At the beginning of the twenty-first century, however, a notable amount of black market activity was exposed by global governance officials, and such trends continue today unabated (Zaelke and Ramanathan 2018). Avipsa Mahapatra, a member of the EIA, laments:

> It is outrageous that industrial climate-killers banned several years ago continue to be produced, used and emitted at this scale in an industry where better technology is easily available. This could undermine not just the slowly healing ozone but also the global efforts to battle climate change. (cited in Darby 2018)

Despite the 2016 amendments to the Montreal Protocol and the creation of substances such as HCFC-141b, a safer alternative to CFCs, the black market is flooded with ODS, posing inimical threats to the planet. Consider, for example, the following statistics pertaining to the concentration of CFCs: an increase of CFC-11 emissions was reported during 2014–2016, with 67 gigagrams per year (Gg/yr). These numbers capture an increase of 13 Gg/yr from the 2002 to 2012 emissions levels (Zaelke
and Ramanathan (2018). The proliferation of CFCs is a direct result of the globalization of these synthetic compounds: CFC-11, for instance, could be produced in one country and emitted from another country, creating hurdles for monitoring stations trying to get to the source of these internationally banned chemicals.

The example of CFC-11 emissions puts a face to White’s (2018) “carbon criminals”. These crimes are committed by corporate entities trying to appease shareholders by advancing corporate self-interest and greed in a highly competitive global market. The socio-economic and structural conditions influencing these companies to engage in such harmful practices must be understood as a function of the global economic conditions in which they operate. These “carbon criminals” engage in climate crimes to protect the proverbial bottom line of their companies, potentially wreaking havoc on the planet, and its inhabitants. But we also see incidental harms caused by efforts to reduce the overall impacts of climate change, such as the shift to “green” vehicles and establishment of protected-area carbon sinks.

**PERVERSE CONSEQUENCES: GREEN LAND GRABS AND CONFLICT MINERALS**

As we inch toward a post-carbon global economy, two striking concerns include the use of carbon conservation as a pretense to engage in land grabs and other forms of marginalization of local people, and the use of human beings in what are essentially slave labor conditions (often mixed with ongoing conflict) in order to mine the precious metals that are helping to fuel the transition to a post-carbon economy. To be clear: neither of these concerns negate the dire need to move away from fossil fuel-based economic growth, nor do they deny the need to achieve the conservation of natural areas as carbon sinks and biodiversity hotspots. But they both suggest that environmental justice and human security are not always at the forefront of forward thinking about energy transformations that are largely geared toward compensating for the carbon overreach in northern advanced capitalist economies and in large industrial economies such as China and India.

Some of the laudable efforts to stem the impact of climate change through the conservation of carbon sinks, such as the establishment of forests and coastal marine protected areas, are being criticized as invoking a new era of “carbon colonialism” which could in itself be
viewed as a form of environmental injustice (Lyons and Westoby 2014; McAfee 2016; Roht-Arriaza 2010). This echoes earlier concerns about the validity of largely self-regulated carbon emission mitigation plans based on self-reporting that open the door to innumerable opportunities for carbon fraud (Bachram 2004; Lohmann 2008), but goes deeper—into the use of market mechanisms that purport to conserve carbon sinks while in actuality expanding land control by governments or outright property ownership by corporations and individuals in the name of climate change adaptation. Green Resources, the largest plantation forestry and wood-processing corporation on the African continent, funded largely with Norwegian and Finnish capital (https://www.norfund.no/investment/green-resources-usd/) and with significant investments in Uganda, Mozambique, and Tanzania, has come under special consideration in this context. Sweden pulled out of buying carbon credits from Green Resources several years ago, concerned about human rights issues (Lyons and Westoby 2014; see also https://stopgetrees.org/carbon-colonialism-failure-green-resources-carbon-offset-project-uganda/). Other projects inspired by carbon offsetting schemes have been critically viewed for compromising human security and rights in Panama (Finley-Brook and Thomas 2011) and Mexico (Dunlap 2018). The concerns with so-called green grabbing are quite widespread, since it forges unfamiliar political space for new players and unlikely alliances:

Green grabbing builds on well-known histories of colonial and neo-colonial resource alienation in the name of the environment – whether for parks, forest reserves or to halt assumed destructive local practices. Yet it involves novel forms of valuation, commodification and markets for pieces and aspects of nature, and an extraordinary new range of actors and alliances – as pension funds and venture capitalists, commodity traders and consultants, GIS service providers and business entrepreneurs, ecotourism companies and the military, green activists and anxious consumers among others find once-unlikely common interests. (Fairhead et al. 2012: 237)

3 Note this is not to be confused with the concept of “carbon imperialism” which suggests the west is actively using the climate crisis as a means to delay development in regions of the world such as Africa and India with low electrification profiles. That is another issue.
As one observer put it, some of the mechanisms aimed at rewarding northern polluters for investing in conservation involve situations where “land is commandeered in the South for large scale monoculture plantations which act as an occupying force in impoverished rural communities dependent on these lands for survival” (Bachram 2004: 7); this has also been termed “accumulation by decarbonisation” (Bumpus and Liverman 2008). The UN program for Reducing Emissions from Deforestation and Forest Degradation (REDD) has been criticized in this light as well (in the case of Australian investment in Indonesian forestry, see Goodman and Roberts 2010), as has the Kyoto Protocol-based Clean Development Mechanism (Schade and Obergassel 2014). We might add to this the continuation of large dam construction, justified partly by the misleading claim that large dams are a form of green energy, that displaces thousands in the name of avoiding fossil fuel consumption, regardless of the harm to nature caused by this process (Erlewein 2013). The UN offsetting programs, and the World Bank and other institutions, have integrated human rights and other factors into monitoring programs, but as the need for offsets under the 2015 Paris Agreement on Climate Change increases, it is more important than ever to ensure that climate change mitigation efforts are not making a bad situation worse.

Similarly, while there is no doubt that the move toward renewable energy is necessary if we are to limit greenhouse gas emissions, there is a price for everything, and no energy technology is entirely free from environmental costs. There is a long history of the pursuit of so-called blood diamonds and other conflict minerals generating sustained misery, fueling wars primarily in Africa, and enslaving hundreds of thousands if not millions, including children, in dangerous working conditions akin to those experienced by workers caught in the sea slavery described in Chapter 4. The rush for the minerals needed for green energy may, sadly, be replicating this transnational ecoviolence.

A groundbreaking study by the International Institute for Sustainable Development (IISD) (Church and Crawford 2018) shed much-needed light on the practices involved in the extraction of several precious minerals that are in high demand not only to operate electronic devices including cell phones, but also those necessary for the battery systems used in electronic and hybrid vehicles, solar power, wind turbines, and other green technologies. These minerals include copper, iron, lead, molybdenum, nickel, and zinc, and their consumption could increase by 300% through 2050 if countries are serious about achieving limiting
global warming to two degrees Celsius (Arrobas et al. 2017). Similarly, demand for minerals like cobalt, lithium, and rare earths such as dysprosium, neodymium, and praseodymium is rising for use in electric vehicles, wind turbines, and energy storage. Already, demand for some of these rare earths is outstripping immediate supply. China produces the majority of rare earths on the market today. As Church and Crawford (2018) write:

Rare earth mining can be both destructive and toxic ... Almost all rare earth ores contain the radioactive elements thorium and uranium (Huang, Zhang, Pan, Chen, & Zheng, 2016) ... In 1958, the Baotou Iron and Steel Company began producing rare earths near the city of Baotou in Inner Mongolia; by 1980 crops in the nearby villages had already started to fail due to pollution of soil and groundwater attributed to rare earth mining and processing (Bontron, 2012). Today, the lands surrounding Baotou are stripped of topsoil while streambeds contain thousands of gallons of acid (Bradsher, 2010). Dalahai village, located close to a Baotou rare earths tailing pond, has been named a “death village” due to the high incidence of lung cancer, brain cancer, respiratory illnesses and cardiovascular diseases suffered by local residents (Huang et al., 2016).

There are, arguably, even more pronounced problems in the African context. For example, the Democratic Republic of the Congo is well known as an illegal mining hotspot where seemingly perpetual conflict has driven thousands to accept unsafe working conditions, and it is also the world’s biggest producer of cobalt. Other cases examined in the IISD report include the mining of nickel in Guatemala, bauxite and alumina in Guinea, manganese in Ghana, lithium in Zimbabwe, and the “Lithium Triangle” between Argentina, Chile, and Bolivia. Unlike the successful movement to establish a certification program for diamonds, animated primarily by Western consumers who felt guilty about purchasing blood diamonds, the international community has been slow to act to keep illegally or problematically mined minerals used in green technologies out of the marketplace (and it is hard to achieve this at the best of times), although industry schemes such as the Responsible Mineral Initiative are having some impact.

In both these cases, it can be argued, it is essential that an ecosystem approach (adopted by the Convention on Biological Diversity in 1995) is employed when plans are made to either mine for “green” minerals or use specific areas for carbon sink and biodiversity conservation. Above all, this entails the active participation and consent of local communities.
and indigenous peoples. It would be foolish to assume that any effort that can be labeled “green” is somehow automatically contributing to environmental justice and human security. Similarly, we will not advance human security or environmental justice if we are accepting of what Diana Ojeda refers to as “green pretexts” which are essentially fronts for growth-oriented ecotourism, neoliberal conservation (Neves 2019), and militarized land grabs and power moves (Peluso 1993).4

**HUMAN SECURITY AND CLIMATE CHANGE IN TURKEY**

While narrow approaches to human security explore the consequences of armed conflict, or the political violence imposed upon civilians by corrupt and repressive governments, broader approaches look to other sources of violence and threats to security—namely, endemic diseases, natural disaster, starvation, severe poverty, and displacement (Cao and Wyatt 2016; Stoett 2000). We can, therefore, reflect on the complexities of the ecoviolence and harms associated with climate change, viewing anthropogenic-induced warming as a threat to humanity’s security. Let us turn to Turkey’s struggle with climate change and how human security can be used to document the myriad threats to the country’s citizens. Though Turkey has some industry and its vehicle drivers and homeowners produce greenhouse gas emissions, it is clear that this country is being affected largely by a problem it did not create, since climate change is inherently transnational in character.

A newly industrialized country, Turkey’s anthropogenic activities associated with the energy, transport, and agricultural industry bring this nation to the forefront when discussing the brutal realities of climatological, hydrological, and meteorological disturbances (Timperley 2018). Certain “push factors” in the form of climatic stress have swept over communities in Turkey as it continues on the path of industrialization. According to Karapınar (2019), Turkey’s greenhouse gas emissions between 1990 and 2015 have increased by 122% between 1990 and 2015, producing 475 million tons of CO₂. The country relies heavily on fossil fuels as a source of its electricity and has yet to ratify the 2015 Paris Agreement. This alone does not explain the fact that citizens of

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4 Even the CBD has been accused of contributing to the cognitive and regulatory environment that enables green grabbing (Corson and MacDonald 2012), though this probably exaggerates the impact of that constrained organization.
Turkey have experienced a drastic rise in temperatures when compared to the global average temperature. In fact, June 2019 was the warmest June on record, according to Europe’s Copernicus satellite monitoring system (Karapınar 2019). But there is no doubt that Turkey is geographically vulnerable to climate change even as its developmental path continues to contribute to the problem.

Turkey’s economic security is threatened by rising temperatures; economic security is vital to a nation’s economic growth and position in the global market. Climate change has the propensity of disrupting Turkey’s economy through extensive damage to property and critical infrastructure, negatively impacting sectors such as agriculture, forestry, water provision, fisheries, and tourism (Karapınar 2019). In a related vein, Turkey’s food security is compounded by climate change’s negative impacts on trade and supply chains. This leads to volatility in the food supply and difficult-to-predict surges in food prices, affecting low-income communities where the nutritional quality of leads to malnutrition and developmental problems.

Protection from infectious diseases and access to public health care constitute citizens’ overall health, and Turkey has witnessed grave threats to its health security. For example, Tapan (2018) reveals that in 2017, provinces across Turkey’s Marmara and Black Sea regions were affected by floods and hail storms—both of which increase the likelihood of epidemics, affecting residents consigned to the poorer regions of the country. In other areas, declining precipitation and droughts threaten water supplies vital to agricultural production and health security, and this precarious situation is exacerbated by the melting of Turkey’s mountain glaciers. Tapan (2018) estimates that the glaciers have been retreating at a pace of approximately 10 meters per year, and excessive snowmelt has raised water levels causing flooding even while it portends a lack of freshwater availability in the future.

There is considerable overlap between personal security and community security. If we expand the definition of violence to include ecoviolence and the harms inflicted on the people of Turkey, we can clearly see how climate change undermines both dimensions of security. For example, Turkey may face mass migration of its citizens as a form of adaptation to climate change; poor rural communities in the country have been pushed to the margins of society, growing more vulnerable to chronic flooding, limited food production, and water stress (Karapınar 2019). A nation’s political security, then, is highly contingent upon
the rest of the world’s commitment to curbing CO₂ emissions. Turkey has placed itself on a trajectory to battle climate change: for instance, drawing on its “National Sustainable Energy Action Plan”, the country has pledged to align itself with international agreements and treaties. Yet since 2002, Turkey has been run by an autocratic leadership under President Recep Tayyip Erdogan which has engaged in widespread human rights abuses and has contentious relationships with neighbouring states. Will climate change induce even harsher conditions which in turn justify an even stricter and further militarized authoritarian regime in Turkey?

**Syncretic Analysis: The Wildfires in Australia**

As we write this chapter on climate change and climate crimes, the Australian states of Queensland and New South Wales are being ravaged by wildfires which, according to some, are the result of natural causes such as dry lightning striking drought-affected forests. The fires started in September 2019 and continued into early 2020, and the world watched in terror as flames spread through cities and towns, wreaking sheer havoc on the county’s human population, biodiversity, and economy. Despite claims that these fires are a mere concomitant of the country’s fire season, or even the work of malicious arsonists, climate change activists have used this tragic event as an opportunity to discuss the broader implications of climate change: a warming planet means soil and vegetation are drier and this exacerbates bush fires which spread farther at an accelerated rate, especially in drought-prone regions. This was certainly a transnational event, as the smoke resulting at least partially from fires caused by global warming literally made its way across the globe, affecting other continents. Indeed, NASA reported that ‘the fires in Australia can cause global damage, saying that “unprecedented conditions that include searing heat combined with historic dryness” have led to an erratic weather phenomenon called “fire clouds”’. These clouds allow smoke to travel 10 miles high, and from there, it can disperse thousands of miles away from its origin’. (https://www.nbcnews.com/science/environment/scientists-find-australian-wildfire-smoke-has-circled-globe-n1116511.)

While Australia is no stranger to wildfires, 2019–2020 was especially unique because that year witnessed unprecedented temperatures in both scale and intensity, reaching a record-breaking high of 41.9 °C. Dozens of people lost their lives in the inferno that spread through various regions of the country, destroying more than 3000 homes and 7.3 million
hectares (17.9 million acres) of land (Newey 2019). Such human misery and destruction remind us of the pernicious effect of climate change and the crimes that drive these incidents. Despite claims that Australia is susceptible to bushfires due to natural causes such as lightning strikes, the country’s Bureau of Meteorology argues that temperatures have been increasing since 1920. In fact, the rate of increased temperatures coincides with rises in global averages as well as Australia’s focus on industrialization in the 1950s, signaling a link between anthropogenic-induced climate change and the preconditions of the wildfires. Australia’s reliance on coal production (and exports to China) is enhancing climate change on a daily basis; state-corporate synergies have been driving this reliance for many decades, regardless of the consequences.

During the height of the fires, the Australian capital city of Canberra was registered as having the worst air quality reading in the world. In fact, the Canberra Times reported that the smoke billowing through the city increased the hazardous air quality reading to about 20 times above acceptable levels (“Media reaction: Australia’s bushfires and climate change”, 2020). The scientific evidence concludes unequivocally that climate change plays a major role in driving these fires as rising temperatures increase rates of evaporation and the severity of lightening storms. Yet the coal coalition—the present Australian government, the coal industry, importers of Australian coal—refuses to acknowledge the obvious.

Despite pleas from climate activists to steer the country away from coal, the acting government refuses to abandon this lucrative industry, with the prime minister stating: “I am not going to write off the jobs of thousands of Australians by walking away from traditional industries” (Dunne et al. 2019, para. 3). Such comments are disconcerting, indeed, as Climate Action Tracker notes that Australian emissions will increase by 8% above 2005 levels by 2030, according to the Paris Agreement targets (Newey 2019). Importantly, it is not just emissions within Australia that matter, but the burning of Australian coal in countries such as China and Japan. Australia is the biggest exporter of coal in the world and one of the top exporters of Liquid Natural Gas (LNG), another fossil fuel. In the long run, it may well be the case that Australia will have no external market for its products (and other heavily fossil-fuel-dependent extractive industries in countries such as the OPEC states and Canada are in a similar position); China, Japan, and South Korea have all pledged to reach net-zero emissions by mid-century. However, in the short-run, this can instill
a sense of urgency amongst industrialists to dig up and export as much coal as possible, as quickly as possible, instead of curbing extraction and exportation.

How might environmental justice aid in expanding our understanding of the ecoviolence and harm of wildfires enveloping Australia? We can begin by exploring how communities’ rights to meaningful involvement in certain decision-making circles were undermined: environmental justice ensures that all people, irrespective of race, ethnicity, class, gender, etc., have an equal opportunity to participate in decisions about activities that affect their environment and/or health. It stands to reason, then, that the public’s collective voice can influence the government’s decisions on how to best conduct certain tasks (Zilney et al. 2006; Banzhaf 2019). With this in mind, we can ask if all Australians had an opportunity to weigh in on important discussions regarding the country’s decision to repeal a successful carbon tax in 2014. This tax, it bears emphasizing, contributed to a laudable reduction in greenhouse gas emissions by 1.4% over two years (Newey 2019). In a related vein, as the country serves as the world’s largest exporter of coal and liquefied natural gas, it is not surprising that coal lobbyists exert tremendous sway over national politics, ensuring their industry flourishes in the global economy. While members of the New South Wales community, along with its fire chiefs, have pressed Prime Minister Scott Morrison to hold an “emergency summit” to explore the possible links between the coal industry and the exacerbation of wildfires, Mr. Morrison has trivialized such links, rejecting the need to change the government’s approach to climate change, and referring to these members of the community as “raving inner-city lefties” (quoted in Newey 2019). According to the principles of environmental justice, the deliberate exclusion of residents of New South Wales on how to tackle climate change speaks to the power of big business and its ability to sway the government’s decisions on how best to run the economy, despite the negative environmental effects.

An examination of the wildfires from a human security perspective lends support to the claim that climate change is a harbinger of ecoviolence and harm, taking a tremendous toll on the planet and its many inhabitants. Let us explore the myriad dimensions of security undermined by the raging bushfires. Many Australians’ economic security has been negatively affected by the 2019 fires, which affected over 7.3 million hectares of land. Economic security refers to the incomes and livelihoods
of Australians—most of which are derived from work, the public, environmental resources, and reliable social safety nets. With an estimated 5900 buildings and 3000 homes having burned to the ground and industries such as farming and tourism coming to a standstill, it is quite clear to see how the fires affected the economic security of the nation (Dunne et al. 2019).

Many Australians’ food security has also been disrupted by the wildfires, which have inhibited peoples’ physical and economic access to basic foods. For example, the fires have destroyed livestock and the country’s dairy supply has been hobbled by a drastic loss of farmland and infrastructure. Newey (2019) concludes that climate change and the bushfires have affected food security and the agriculture industry due to changing precipitation patterns; increased land surface air temperature; and climate variability and anthropogenic activities. Australia’s health security, on the other hand, is severely undermined by the bushfires because recent reports indicate that ash is now washing up on the country’s beaches and into water catchments, some of which are relied upon as a source of drinking water. Health security is the guarantee of protection from disease, and access to personal health, but the fires in Australia have subverted such a guarantee. For example, bushfire ash contains nitrogen and phosphorous and these elements stimulate the growth of cyanobacteria, colloquially referred to as blue-green algae. This particular strand of algae produces toxic chemicals and can lead to skin/mucosa irritation, flu-like symptoms, gastrointestinal illness, and liver failure among humans and non-human animals. Air pollution, on the other hand, leads to reduced lung function, bronchitis, exacerbated asthma, and premature death (Peischel 2020).

Environmental security in Australia is also impacted by the bushfires, with peoples’ rights to a healthy living environment being infringed upon. Smoke and fine particle air pollution from the fires threaten environmental security through the release of hazardous gases and particles that can negatively impact water, soil, and air quality. When considering how the fires affect the nation’s ecology and biodiversity, we need only look to the estimated billions of animals and insects that have likely died as a result of habitat destruction and food loss. If we consider that the world’s terrestrial biodiversity is heavily concentrated in forests, and the bushfires swept through the majority of Australia’s expansive and lush forests, we can safely conclude that the country’s environmental security has been severely impacted by climate change.
Referred to as the safety from violence and the membership in a community with cultural values, personal security and community security, respectively, have been weakened by the toll the bushfires have taken on myriad communities. As of this writing in early 2020, at least 33 people have died as a result of the colossal fires, with tens of thousands of people being forced to evacuate their homes (and it is estimated that some 3 billion animals were harmed or killed: see https://www.bbc.com/news/world-australia-53549936). With some of the fires spreading at a rate of 55 miles an hour, some of the country’s most vulnerable had no chance of escaping the grips of the infernos. Finally, the political security of Australia is undermined because the people of Australia have, arguably, experienced a gross violation of their human rights. While conventional definitions of political security revolve around freedom of state oppression and abuses of human rights, we interpret the Australian government’s complete disregard for pleas to curb greenhouse gas emissions as a failure to act and protect its people. This failure is revealed not only through the lives that were lost, but the mental trauma that citizens have experienced as a result of emergency evacuations and the tragic loss of homes, belongings, livestock, and many other sources of livelihoods. Relatedly, other communities were not so fortunate and unable to evacuate and, therefore, were trapped in extremely high-risk areas. Under such circumstances, it could be suggested that basic human rights were jeopardized due to the sheer political inertia of the government during the apex of the global climate crisis. This statement can be extended far beyond Australia’s Pacific borders, and is made even more emphatic by the sheer fact that we know there is an even greater climate crisis coming. While we might have been surprised by the severity and extent of the COVID-19 pandemic in 2020, we have no such excuse for the ravages of climate change that await us; surely this shifts our perceptions of culpability?

Conclusion

Climatologists have prognosticated about the grave perils of a warming planet for quite some time, yet their pleas to mitigate climate change have generally fallen on the deaf ears of the powerful and wealthy that continue to engage in activities and investments that induce climate change. The stark fact that much of the world’s wealth was accumulated with energy derived from fossil fuels is also a legacy that underpins the contemporary global economy. The spectacle of the uber-wealthy taking climate
change seriously is almost passable as Monty Pythonesque humor. For example, as George Monbiot relays, “when Google convened a meeting of the rich and famous at the Verdura resort in Sicily in July [2019] to discuss climate breakdown, its delegates arrived in 114 private jets and a fleet of mega yachts, and drove around the island in supercars. Even when they mean well, the ultrarich cannot help trashing the living world....” (Monbiot 2019). Indeed, they just can’t help themselves! Or, as Bruno Latour, displaying his usual tendency to upscale modern problems into the collapse of modernity, writes:

…the superrich, of whom Trump is merely the intermediary, have added to their flight a crime for which there is no atoning: their obsessional denial of climate change. Because of this denial, ordinary people have had to cope within a fog of disinformation, without anyone ever telling them that the project of modernizing the planet was over and done with, and that a regime change was inevitable. (Latour 2018: 24)

Mary Robinson, former Irish President and UN Commissioner for Human Rights, reminds us that “climate change is a threat multiplier – it exacerbates poverty and water scarcity, it compounds food and nutrition insecurity and it makes it even harder for poor households to secure their rights” (Robinson 2015). But it is also a crime multiplier, as the lying, deceit, and fraud designed to avoid serious transformational change continue to gain traction in the twenty-first century (Agnew 2011). The fight against a warming planet begins with addressing the different dimensions of justice: international justice, intersectional justice, and intergenerational justice, all of which are aspects of environmental justice. The first dimension, international justice, recognizes that climate change is a global phenomenon, and responses must be predicated upon cooperation and coordination between countries. Intersectional justice refers to ensuring that no community is excluded from a green transition, irrespective of race, gender, gender identity, age, dis/ability, nationality, immigration status, sexuality, religion, or education. The elimination of barriers so people from all walks of life may weigh in on important decisions affecting the health and safety of their environments is, of course, a shining example of the tenets of environmental justice. The final dimension is intergenerational justice, and this promotes the responsibility of redressing the history of anthropogenic climate change, while creating new innovations and strategies of environmental governance so that
future generations do not bear the disproportionate share of global warming (Adler and Wargan 2019).

This chapter explored the themes of justice as they relate to the crisis of climate change; this was followed by an analysis of the ecoviolence and harm of climate change, and then by some prospective legal responses; finally, we presented disparate case studies of climate change through the lenses of environmental justice and human security and offered a syncretic analysis. While the calamity of the Australian fires faded into the background and the world’s attention was grabbed by the COVID-19 pandemic in 2020, the climate crisis will no doubt resurface as the greatest threat faced by humanity. Those seeking solutions will need to be aware of the new crimescape being constructed as climate change-related behavior becomes a central focus of governments, international agencies, and corporations—and as community actors continue to lead the way toward a greener future.

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