

CHAPTER

5 Climate Justice and Inequality

Sharon L. Harlan, David N. Pellow, J. Timmons Roberts,
Shannon Elizabeth Bell, William G. Holt, Joane Nagel

<https://doi.org/10.1093/acprof:oso/9780199356102.003.0005>

Pages 127–163

Published: August 2015

Abstract

Climate change is a justice issue for three reasons. First, its causes are driven by social inequalities: most politically, culturally, and economically marginalized communities and nations use vastly less fossil fuel-based energy. Second, the rich and poor feel its impacts unequally; this is true locally, nationally, and globally. Third, policies designed to manage climate change—including renewable energy sources, adaptation measures, and geoengineering schemes—will have starkly unequal impacts within and across societies. This is in part because decision-making processes for emissions reductions and adaptation policies tend to exclude the politically marginalized. Sociologists are advancing understanding in these areas and in studying the ideas and strategies of grassroots social movements and nongovernmental organizations advocating for environmental justice. Sociologists bring an essential, unique toolkit to explore, explain, and help society address climate inequality and injustice. Sociology needs to initiate and foster interdisciplinary cooperation in the development of theory, methods, and substance.

Keywords: [climate justice](#), [climate policy](#), [environmental justice](#), [social inequality](#), [social movements](#), [sociology](#)

Subject: [Sociology](#)

Collection: [Oxford Scholarship Online](#)

Introduction

Climate change is a justice issue for three reasons. First, there are *causes* of climate change: social inequalities drive overconsumption, a key source of unsustainable levels of greenhouse gas (GHG) emissions. Second, the *impacts* of climate change are unequally felt by the rich and poor, and disparate impacts will continue to increase in future generations. Third, *policies* designed to manage climate change have starkly unequal consequences, and the processes by which emissions reductions and climate adaptation policies are decided tend to exclude the poor and the powerless.

Climate injustice is caused by inequalities: the most politically, culturally, and economically marginalized communities and nations use vastly less fossil fuel-based energy and bear far less responsibility for creating environmental problems than do wealthier nations and people, who use far more than is needed for a decent quality of life. Overconsumption beyond ecologically sustainable levels is driven in large part by humans' desire for social status, as conspicuous consumption and leisure secure our position in society ([Bell 2013](#); [Veblen 2007](#)). Nearly 75 percent of the world's annual carbon dioxide (CO₂) emissions come from the Global North, which makes up only 15 percent of the global population ([Holdren 2007](#)). One extremely wealthy person may emit as much carbon as 70,000 poor individuals in the world's poorest countries ([Roberts and Parks 2007](#)). The governments of wealthy nations have largely failed to address this because they perceive that cutting back on fossil fuels could reduce or eliminate the

economic growth that has produced their prosperity. Yet if historic responsibility is taken into account, Global North nations have consumed more than three times their share of the atmosphere (in terms of the amount of emissions that we can safely put into the atmosphere) while the poorest 10 percent of the world's population has contributed less than 1 percent of CO₂ emissions ([Roberts and Parks 2007](#); but see [PBL Netherlands Environmental Assessment Agency 2013](#)). Climate injustice also refers to the fact that climate change or climate disruptions affect nations and people very differently, compounded by cascading effects of globalization that conspire to place the most vulnerable people at a cumulative disadvantage ([O'Brien and Leichenko 2000](#)). The Global South and people of color, Indigenous communities, the poor, and women and children in all nations are precisely the populations that bear the brunt of climate disruption in terms of its ecological, economic, and health burdens. Many governments of the Global South feel strongly that they have paid a heavier price for climate change, or are likely to pay as impacts grow worse, while receiving very few of the benefits ([World Bank 2006](#)). Most basically, the world's most marginalized people are suffering worst and first from the rise in climate-related disasters ([Kasperson and Kasperson 2001](#); [Roberts and Parks 2007](#)). As Kasperson and Kasperson put it so powerfully over a dozen years ago, "Recognizing and understanding this differential vulnerability is a key to understanding the meaning of climate change" (2001:2). Therefore, to understand climate disruption and how to address the potentially devastating problems of climate change requires understanding inequalities in human wealth, power, and privilege. Sociologists are unique among scientists in our relentless focus on inequality. Social inequality is the core of sociology, a conceptual bridge between widely divergent researchers who study forms of social behavior at the micro (individuals and families) and macro (communities, nations, and world economic systems) levels, using a range of methodologies. Many other disciplines are less attentive to inequality as a subject of scientific inquiry because they assume human differences are an inevitable result of biological inheritance or individual

abilities and preferences, rather than structural causes, such as those deriving from economic change, inheritance of social class, or institutional policies. Sociologists generally dispute those scholars, policy practitioners, and even environmental activists, who assume that inequalities are receding, or will be addressed by economic growth or sustainability campaigns (Agyeman 2005).

This chapter highlights four kinds of significant contributions that sociologists are making to advance our understanding of climate injustices and how we might lessen their effects:

1. Theorizing the origins and perpetuation of social and environmental inequalities at global to local scales of human organization;
2. Understanding the unjust impacts of climate change on vulnerable populations;
3. Critically evaluating the potential of climate mitigation and adaptation policies for achieving climate justice;
4. Studying the ideas and strategies of grassroots social movements and nongovernmental organizations (NGOs) advocating climate justice.

In the next sections we review the work of some pioneering sociologists and related social scientists who are pointing out the value of bringing an understanding of human institutions, inequality, and justice into the largely natural science and technical solutions-based discussion on climate change. First we briefly review some classical theories of inequality, which have been expanded and enriched by generations of sociologists. These theories explain the social divisions and power imbalances that cause climate injustice. In the next section we review principles of social justice and pose two questions—one factual and one normative—that frame climate justice issues. The following section illustrates human vulnerabilities to the impacts of climate change with examples of unequal burdens borne by communities in “sacrifice zones” of energy extraction and among people in places affected by extreme weather. In the next section we assess how different stakeholders (e.g., international

governing bodies, nations, and social movements) position themselves on climate change mitigation policies (e.g., global strategies to limit emissions through international cap-and-trade systems) and sociologists' engagement with grassroots organizations that propose more holistic adaptation policies focusing on the importance of place and the interdependence between sustainable communities and local ecosystems. We conclude by proposing ways to advance sociological research and contributions to climate change policy, and call for interdisciplinary cooperation on efforts to engage localities, nations, and the United Nations system as they move to address climate change.

Theories of Inequality: Foundation for Understanding Climate Injustices

Class, Gender, and Race Inequalities

Inseparable from any understanding of justice—and climate justice—is the problem of social inequality. Theorizing inequality, which dates back to the origins of our discipline, is one of sociology's major contributions to the science of climate change. What exactly is inequality and why does it matter? Inequality is a means of ordering the human and nonhuman worlds for the relative benefit of some, and to the detriment of others.

Some of the most important sociological research on inequality dates back to the late nineteenth and early twentieth centuries when scholars like Karl Marx, W. E. B. Du Bois, Jane Addams, Max Weber, and Robert Park produced groundbreaking work that would stand for generations. In his wide-ranging published works, Marx grappled with the role of the state and capital in maintaining and exacerbating social inequalities. For Marx, social inequalities are the result of the exertion of elite class dominance over the working classes, and therefore successful efforts to secure a better life for society's majority must involve deliberate confrontations with established institutions ([Marx 2000](#)). Sociologists [Gould](#),

[Schnaiberg, and Weinberg \(1996\)](#) and [Leslie Sklair \(2001\)](#) adopt this approach in their work on environmental damage, suggesting that citizen-workers must confront capitalism's core institutions to reform the system.

In the very first volume of the *American Journal of Sociology*, Jane Addams published a paper critical of the feudal-like character of domestic work and how it maintained a system of gender inequality and social isolation that disadvantaged women in particular ([Addams 1896](#)). Three years later (1899) Addams published an article in the same journal on the importance of trade unions and other social movements as critical bulwarks against the scourge of child labor and rising class inequalities (Addams 1899). That same year, W. E. B. Du Bois published *The Philadelphia Negro*, which was perhaps the first major research study of an urban African-American community ([Du Bois 1899](#)). In this seminal work Du Bois challenged numerous stereotypes and racist assumptions about African Americans while underscoring the importance of grasping the socially constructed character of race relations in the United States. This was also one of the first major sociological studies to incorporate multiple research methods, including interviews, observations, and census data.

In the three decades that followed, Robert Park and his colleagues at the University of Chicago articulated an early model of human ecology—a perspective that viewed urban centers as sites of human activity that mirrored much of what was believed to characterize nonhuman nature and ecosystems: competition for scarce resources. In the city, people competed for jobs, land, housing, and so forth, and this reflected and produced various class, racial, and spatial inequalities ([Park 1915](#)). Max Weber, a contemporary of both Du Bois and Park, explored the various consequences and implications of the most important organizational form of the modern era on inequality: bureaucracy ([Weber \[1922\] 1978](#)). Weber found that although bureaucracies are perhaps the most effective ways of addressing the administrative requirements of large-scale social systems in modern societies, they also require strict hierarchies and frequently dehumanize people and threaten the fundamental core of a democratic society.

The perils of bureaucracy are exacerbated by the growth and strength of what [C. W. Mills \(1956\)](#) called the “power elite”—that powerful minority of people who occupy positions at the top of military, political, and economic institutions. The power elite controls those institutions in ways that constitute a fundamental threat to the core values of a society that cherishes equality of opportunity. The ways in which power and inequality function in society are indeed quite complex, reflecting what [Anthony Giddens \(1984\)](#) termed structuration—the dynamics through which social structures limit individual behavior, but also make it possible. In other words, as highly unequal as any given society may be, even the person on the lowest rung of the social order exerts influence on society’s structures while simultaneously being constrained by them. This reminds us that even the most vulnerable communities have agency and that they can organize to resist climate injustice.

Sociologists continue to pursue similar questions in a rapidly changing urban landscape marked by rising inequalities, segregation, unemployment, poverty, deindustrialization, bureaucratization, globalization, and the political and cultural terrain of the post-civil rights era. These scholars research and debate the role of industry and capital, the state, place, culture, and the family in producing and challenging persistent class, gender, racial, and spatial inequalities in urban America (e.g., [Logan and Molotch 2007](#); [Massey and Denton 1993](#); [Patillo 2013](#); [Sampson 2012](#); [Wilson 2012](#)).

After more than a century of urban sociological research, one thing is clear: social inequalities persist, and efforts to reduce or eliminate them remain elusive (see, e.g., [Oxfam 2014](#)).

Sociologists and scholars across the social sciences and humanities are expanding the boundaries of the classics, taking research on inequality in new and generative directions. Marxist, feminist, racial/ethnic studies, environmental and animal studies, and disability studies scholars have articulated theories of inequality in order to examine the ways that hierarchies are produced, maintained, and challenged across the categories of class, race, gender, sexuality ([Anderson and Collins 2006](#)), culture, citizenship/nationality, nation ([Bruyneel 2007](#); [Nagel 2012](#)),

age, ability (Clare 2009), and species (Fitzgerald and Pellow 2014; Gaard 2004). It is important to understand that each of these differences is intertwined with the others, giving rise to the concept of intersectionality—the idea that we cannot fully comprehend or measure one form of advantage or disadvantage in isolation from others because they interrelate and affect each other (Collins 2000; Crenshaw [1991] 1994).

The literature on intersectionality underscores that inequality is, above all, *unnatural* in the sense that it does not “just happen”—it requires a great deal of energy, labor, and institutional effort to produce and maintain unequal societies. This point is crucial because there is also so much energy invested in making inequalities appear to be a “natural” state of affairs. As Greta Gaard (2004:36) writes, “Appeals to nature have often been used to justify social norms, to the detriment of women, nature, queers, and persons of color.” Thus, inequality is not just a state of being unequal; it is frequently experienced as unearned privilege made possible by domination and injustice, and, not surprisingly, routinely resisted by those who suffer its consequences.

Inequalities can be institutionalized by systematically placing subordinate social groups in harm’s way, exposing them to greater risks from hazardous conditions, such as climate change. Vulnerability, a concept with theoretical roots in the social, natural, and health sciences, is “a function of the exposure (who or what is at risk) and the sensitivity of the system (the degree to which people and places can be harmed)” (Cutter et al. 2008:599). Proximity to hazards in the natural environment leads to different degrees of risk exposure and sensitivity that are shaped by human decisions to alter the environment in ways that amplify the harmful effects of hazards for some populations more than others (Bolin and Sanford 1998; Zahran et al. 2011). Risks from objective hazards are “always mediated through social and cultural processes” (Wisner et al. 2004:19), or, more pointedly, as Kathleen Tierney (1999:215) said, “sociology emphasizes the contextual factors that structure vulnerability to hazards and the linkages that exist between vulnerability and social power.” We specifically examine unequal

vulnerability to climate change by race, class, and gender in the fourth section of this chapter.

Environmental Inequalities in Communities and Among Nations

Theories of social inequality laid the foundation for the field of environmental justice studies, which in turn is the forerunner of climate justice research in communities. For nearly four decades, scholars have known that exposure to pollution in the United States is distributed unevenly by race, class, and gender ([Brulle and Pellow 2006](#); [Bullard 2000](#); [Mohai, Pellow, and Roberts 2009](#)). Environmental justice studies underscore the historical and ongoing institutional practices that produce environmental inequalities at the local, regional, national, and transnational scales.

Communities of color and low-income, immigrant, and Indigenous communities often face disproportionately high levels of exposure to industrial pollution from power plants, manufacturing facilities, transportation corridors, and extractive industries that are sited in their communities ([Crowder and Downey 2010](#); [Pais, Crowder, and Downey 2014](#); [Pulido 2000](#); [Stephenson 2014](#); [Zahran et al. 2008](#)). Technological changes in energy and industrial production frequently produce new environmental inequalities and vast disparities between the privileged and the disadvantaged in exposure to climate-related hazards and risks associated with increasing emissions. The communities most adversely affected by emissions are commonly excluded from decision-making bodies that authorize and regulate such practices ([Bullard 2000](#)).

A plethora of studies on environmental inequality provides evidence of racial inequalities (e.g., [Downey 2006](#)), whereas other studies find that social categories, such as age, poverty, and class, matter as much or more than race, depending on the context ([Mennis and Jordan 2005](#)). Scholars have generally considered and debated three explanations for environmental inequality among communities in the United States: economic, sociopolitical, and racial discrimination.

Economic explanations posit that market actors seek to maximize profit by placing noxious facilities in communities where the land is cheap. Therefore, these actors are motivated by lowering the cost of doing business, rather than an agenda of animus or discrimination (Been 1994; for a critique see [Mohai and Saha 2006](#)). Of course, many places where land is cheap are also sites where low-income people and people of color reside.

Sociopolitical explanations posit that toxic facilities are placed in communities with the least capability to mount effective political opposition to such practices ([Saha and Mohai 2005](#)). The “path of least resistance” also tends to be through low-income neighborhoods and communities of color ([Saha and Mohai 2005](#)). Facilities are sited in poor and minority neighborhoods because those communities had little-to-no political power in the establishment of industrial zoning laws or in town planning bureaucracies, and their properties were seen as less valuable to the community’s economic development ([Roberts and Toffolon-Weiss 1999](#)).

Racial discrimination explanations contend that environmental inequalities are the result of historical and contemporary institutional policies that lead to the concentration of polluting facilities in low-income and people-of-color communities ([Bullard 2000](#); [Bullard and Wright 2009](#)). For example, historical and contemporary patterns of zoning and residential segregation are primary social forces that contribute to environmental inequality for people of color and the poor ([Massey and Denton 1993](#)) because these forces limit individuals’ capacity to choose where to live, thus frequently relegating these groups to highly polluted areas and restricting their mobility out of such compromised environments.

Global political economic theories, developed by sociologists and scholars in related fields, are promising avenues for understanding international climate injustices because they explain the foundations of inequality within the structures of national economies and political systems ([Austin 2010](#)). World systems theory contends that the historical economic development of core (wealthier) nations in the Global North occurred as a result of ecological degradation, social

upheavals, and economic underdevelopment within the periphery (poorer) nations in the Global South (Bunker and Ciccantell 2005). This basic relationship continues in the contemporary era as core nations gain disproportionate access to capital and externalize the costs of capital accumulation onto nations of the periphery (Bunker and Ciccantell 2005). This perspective aids us in understanding why core nations are the largest emitters of GHGs and enjoy higher gross domestic product (GDP) and other quality-of-life measures (Bonds and Downey 2012).

For example, sociologist Stephen Bunker built upon social theories of unequal exchange developed in the 1970s (Amin 1974) to formulate a theory of “ecologically unequal exchange.” In his theory, extended by Martinez-Alier (2003) and others, “extractive peripheries” of the developing world (which supply primarily minerals, lumber, or other raw materials) fail to gain the benefits of social development, while urban regions in core nations centralize resources and wealth from all across the planet, and thereby diversify and protect themselves from economic booms and busts (Bunker 1985). This dynamic of natural resource extraction from the developing world is compounded by the problem of additions—that is, the pollution in the form of toxic waste and other externalities of production with which wealthy core nations burden the Global South (Jorgenson, Dick, and Shandra 2011; Pellow 2007).

An intellectual offspring of unequal exchange is “ecological debt,” or more specifically “climate debt,” a key concept used by climate justice scholars and activists (Martinez-Alier 2003). Autonomous University of Barcelona economist Joan Martinez-Alier worked closely with the Ecuadorian NGO Acción Ecológica to publicize the idea that rich countries owed the Global South because of a “debt accumulated by Northern, industrial countries toward Third World countries on account of resource plundering, environmental damages, and the free occupation of environmental space to deposit wastes, such as greenhouse gases, from the industrial countries” (Acción Ecológica 2000). The idea of climate debt spread quickly at a major conference of developing countries in Havana in 2000, and it has become widely adopted as a

central tenet of the international climate justice movement: those who have historically created the problem of global climate change bear responsibility for repaying their “climate debt” for the atmospheric space they have consumed to those who did not create the problem ([Roberts and Parks 2007](#)). In the fifth section of this chapter we discuss international policies and interest groups that seek to define solutions for reapportioning the costs of climate change among nations.

Principles of Justice and Climate Change

Social theorists and moral philosophers, among others, have probed the meanings of social justice, environmental justice, and most recently climate justice. Climate justice is a twenty-first-century idea, but its roots are firmly established in theories of social and environmental justice from the twentieth century, which sociologists have had a key role in developing along with other social scientists, philosophers, and legal scholars. Because climate justice is now an interdisciplinary term used by many different actors on the global policy stage, we provide some background on how social theory is foundational to core justice principles, particularly as the principles pertain to climate change. Much of the scholarship on social justice is about unequal distributions of resources and opportunities across populations and geographic space ([Hayward and Swanstrom 2011](#)). [John Rawls \(2001\)](#) argues that achieving justice in society must involve the expansion of opportunity and reductions in resource inequalities. Rawls’s work is commonly framed as a *distributional* approach to justice, as it emphasizes outcomes of the distribution of goods in society and what might be the most appropriate principles to achieve that end.

Distribution (which can also be framed as a political economic or material approach to justice) is of critical importance, although political theorists [Iris Marion Young \(1990\)](#) and [Nancy Fraser \(1996\)](#) contend that justice cannot be reduced to a focus on inequalities in material goods

distribution. In their view, research on social justice should begin with the concept of unequal power relations or domination and oppression of social groups. They contend that research should focus on the social relations and processes through which injustices are created and actions should shift to eliminating injustices through processes that involve the recognition and inclusion of oppressed and marginalized populations. *Recognition* is defined as the process of acknowledging and valorizing cultural and status differences and distinctions (Fraser 2013)—whether they be gender, class, racial, sexual, national, and so forth. Justice then requires an acknowledgement “of social structures that oppress certain social groups” (Harrison 2011:15).

The concept of recognition implies that justice is impossible without procedures for *participatory parity* to allow members of society open and full access to decision-making bodies and procedures (Fraser 2013; Harrison 2011; Schlosberg 2009). Finally, following Amartya Sen (1993), justice can be realized only if there is also a sufficient degree of *capabilities*—the resources, opportunities, freedoms, and institutions required for individuals and groups to exist as full members in a given society. Examples of capabilities include “jobs, living wages, clean air and water, and affordable and accessible public transit, health care, housing, and food” (Harrison 2011:15). Distribution, recognition, participation, and capabilities are inseparable concepts of justice because in order for people to gain access to material (distributional) social goods, they must be valued and included (recognition) through access to society’s decision-making institutions (participatory parity) and society’s basic institutions (capabilities) (see also Banerjee 2010; *Principles of Environmental Justice* 1991; Shue 1993). Some scholars would amend this quartet by insisting on a consideration of *restorative* justice, which emphasizes rebuilding relationships and healing rather than punishing guilty parties (e.g., Braithwaite 1999; Grasso 2010; Paterson 2001). All of these concepts of justice have direct relevance to environmental sociology and for the prospects of addressing the climate crisis.

In the great climate change debates of our time, there are multiple, overlapping, and often conflicting ways that

stakeholders have defined and pursued “justice” through the lens of climate politics (Bulkeley et al. 2013). Drawing on the broad overview of justice summarized here, we apply the principles to a definition of climate justice that includes the following:

1. Equity in *distributing* the burdens and sharing the benefits of climate change in communities and among nations;
2. Social and political processes that *recognize* currently or previously marginalized groups as rightful *participants* in the governance and management of climate change;
3. Freedom of peoples to make choices that maximize their *capabilities* to survive now and in the future;
4. *Rebuilding* damaged historical relationships between parties, correcting past wrongs against humanity, and *restoring* the Earth.

Because the impacts of climate change are projected to be much more severe in the future, climate justice is concerned with society’s obligation to limit GHG emissions for future generations as well as for people living today (Broome 2012; Lawrence 2014; Postner and Weisbach 2010). The central questions in this debate are as follows: (1) How does burning fossil fuels (and other ways of emitting GHGs) harm people throughout the world, and how will it affect them in the future? (2) How should we (the world community of people and governments) decide what to do or not to do about climate change (Broome 2012:99)? In the next sections, we highlight sociological research that addresses these two questions.

Disparate Impacts: Harms Caused by Climate Change

People living in poverty are exposed to persistent, intersecting, and entrenched structural inequalities, making

them particularly vulnerable to harm from the hazards unleashed by climate change ([Intergovernmental Panel on Climate Change \[IPCC\] 2014](#), Chapter 13). People of color, Indigenous peoples, and women are examples of social groups that are disproportionately vulnerable to the long-term effects of increased air pollution, extreme heat, drought, food and water shortages, infectious disease, storms, and floods. They are more vulnerable to climate disruption due to discrimination, cultural expectations, and subordinate positions in social hierarchies (e.g., [Kasperson and Kasperson 2001](#)). Here we relate only two of many possible illustrations that describe harms directly linked to carbon emissions from energy production and the changes in weather events that are increasing in frequency, intensity, and destructiveness in different parts of the world.

Energy Sacrifice Zones

Human-induced climate change is caused by a “basket” of gases that includes carbon dioxide, methane, nitrogen gases, and chlorofluorocarbons. About 57 percent of the greenhouse effect is driven by carbon emissions from burning fossil fuels, and coal-fired power plants are responsible for 40 percent of carbon emissions in the world ([PBL Netherlands Environmental Assessment Agency 2013](#); U.S. Environmental Protection Agency [EPA] 2014; but see [Jorgenson and Birkholz 2010](#)). In addition to its contributions to hastening climate change, the coal industry also causes other great ecological and social harms. Coal is responsible for a large proportion of air pollution and damage to human health, ecosystems, crops, and infrastructure ([Bell and York 2012](#)). Sociological research on the effects of extractive industries on U.S. rural communities is well documented. Some of the effects of mining “booms” are increased social isolation and crime, stymied social and economic development, and deteriorating health of residents ([Bell and York 2012](#); [Freudenburg 1992](#); [Malin 2014](#)). Vast numbers of people around the world suffer at the front end of climate change because they live in such “energy sacrifice zones”—places that are exploited for the purpose of supplying cheap fossil

fuels and electricity to power the world's growing energy demands.

Throughout the entire life cycle of coal—mining, processing, washing, and burning of coal—workers and nearby communities are endangered by industry practices.

“Mountaintop removal,” a particularly destructive method of coal mining, damages fragile ecosystems, endangers water supplies, and renders nearby communities vulnerable to increasingly devastating flood events ([Bell 2013](#); [Bell and York 2010](#)). Throughout central Appalachia, this type of coal mining has led to losses in human life, structural damage to homes, contaminated well water, and a loss of access to land once used for hunting food and gathering medicinal herbs ([Bell 2013](#)). After coal is mined, the harm to local communities continues as a result of waste impounded as sludge or injected underground ([Orem 2006](#)). In comparison with the rest of the nation, coal-mining areas of Appalachia suffer higher rates of birth defects, cancer, and mortality, even after controlling for such variables as income and education ([Ahern et al. 2011](#); [Hendryx 2008](#)).

People of color experience climate injustice at nearly every point in the climate disruption process, not only at sites of fossil fuel extraction, but also in the stages of refinement and processing, combustion, and waste dumping. They bear a disproportionate share of health burdens linked to energy produced from fossil fuels. In 2002, more than 70 percent of African Americans and 58 percent of whites lived in counties that are in violation of federal clean air laws and standards (U.S. EPA n.d.). Seventy-eight percent of African Americans, compared to 56 percent of whites, live within thirty miles of a coal-fired power plant ([Congressional Black Caucus Foundation 2004](#)). Inhalation of increased particulate matter and nitrogen oxide released from power plants is linked to many adverse birth outcomes and respiratory and cardiovascular diseases. Asthma, an illness commonly associated with air pollution from coal burning, is 36 percent more prevalent among African Americans than among whites ([Black Leadership Forum et al. 2002](#)), and climate disruption is expected to push that trend upward in the coming years as higher temperatures interact with pollutants to sharply

increase smog in urban centers.

Latino Americans are also disproportionately likely to live near a range of toxic locally unwanted land uses in the United States, particularly coal-fired power plants ([Quintero-Somaini and Quirindongo 2004](#)) and high-traffic transportation routes. They are more likely to be exposed to pesticide poisoning because many are employed as farm laborers in industrial agriculture ([Quintero-Somaini and Quirindongo 2004](#))—an industry that contributes to climate change through deforestation and massive use of petroleum products for fertilizers and transportation.

Indigenous peoples of the world are among the communities most affected by climate change ([Anchorage Declaration 2009](#); [Indigenous Environmental Network 2009](#)). In the United States, the extraction of energy resources has run a long and often deadly course in Indian country, with a distinctly colonial flavor. Tribes have supplied access to abundant ecological materials at low prices in contracts promoted by the federal government, yet they often receive few if any benefits from such projects ([Gedicks 1993](#); [Snipp 1986](#)). Even the most recent federal energy legislation and incentives are designed to encourage the development of tribal resources by outside corporate interests without ownership or participation of the host tribes. As a result, many tribal communities face a range of ecological, social, and economic challenges related to practices that contribute to climate change, including energy extractive industries, deforestation, and hydroelectric dam projects ([National Aeronautics and Space Administration 2009](#)). In Kenya, the United Nations Environment Programme (UNEP)-funded Mau forest conservation project made the forest “ready” for a carbon offset reforestation project by forceful and often violent eviction of its inhabitants by the Kenyan Forest Service, including the Indigenous Ogiek people, who had lived on their ancestral lands in the region for centuries ([Lang 2009](#)).

Oil production in developing nations is closely associated with human rights abuses and increasingly linked to the issue of climate justice. Examples include reports of Chevron’s legal troubles linked to massive toxic waste dumping in waters and

on lands affecting Indigenous peoples in Ecuador ([Widener 2011](#)); Unocal's investments in the brutal regime in Myanmar involving forced labor for oil pipeline construction ([Dale 2011](#)); Chevron and Shell's involvement with dictatorships that have executed Indigenous activists in Nigeria ([Fishman 2006](#)); and numerous foreign oil firms who stand accused of fueling mass displacement and killing of civilians living near oil fields in Sudan ([Fishman 2006](#)).

The construction of mega hydroelectric dams in Africa, Latin America, and Asia, while "cleaner" in carbon emissions terms, has frequently been accompanied by the evictions of Indigenous peoples occupying land in valleys to be inundated. In Guatemala, Brazil, India, and China, a series of huge dams have displaced hundreds of thousands of people. In response, some cases of resisters being tortured and massacred have been reported, and an international movement arose to fight for change in dam-building practices ([McCully 2001](#)).

Moreover, large dams are not clean sources of electricity: studies reveal that rotting organic matter in some dam reservoirs produces significant levels of GHG emissions ([Fearnside 2002](#); [McCully 2001](#)).

Climate and Weather Extremes

Analyzing over 4,000 climate-related disasters across two decades, [Roberts and Parks \(2007\)](#) found stark differences between wealthy and poor nations in lives lost and people made homeless. National wealth, social inequalities, and organization of civil society were among the significant predictors of suffering from climate disasters. "Natural" disasters are often triggered by human activities, and the impacts, aftermath, recovery, and legacy of such disasters are shaped heavily if not determined by social structures ([Bullard and Wright 2009](#); [Tierney 1999](#)). A landmark study on U.S. natural disasters ([Mileti 1999](#)) drew on all the major studies of natural disasters in the twentieth century, concluding that "In the United States the key characteristics that seem to influence disaster vulnerability most are socioeconomic status, gender, and race or ethnicity" (see also [Klinenberg 2002](#) and [Tierney 2007](#)).

The link between sites of natural disasters and environmental racism in the United States is clear and powerful ([Bullard and Wright 2009](#)). The level of public health risk is elevated when we consider the potential impact of a hurricane or tropical storm on hazardous facilities because anyone living nearby will be more likely to experience exposure to accidental toxic releases. The historic concentration of African Americans in the Southern states places them disproportionately at risk from hurricanes on the Gulf and Atlantic coasts, where the largest percentage of African Americans live. Most deaths during heat waves occur in cities, and people of color are twice as likely as whites to die in a heat wave and more likely to suffer from heat-related stress and illness ([Kalkstein 1992](#)). In the 1995 Chicago heat wave, communities in the historic “Black Belt” were hit hardest by heat-related deaths ([Klinenberg 2002](#)) and African Americans died at a rate 50 percent higher than whites ([Whitman et al 1997](#)). Trends in other U.S. cities are similar ([O’Neill, Zanobetti, and Schwartz 2003](#)).

Chronically hot summers in cities are also a serious climate injustice in low-income, minority neighborhoods ([Harlan et al. 2006](#); [Reid et al. 2009](#)). Phoenix, Arizona, is one example of many U.S. cities where Latinos and African Americans predominantly live in the inner city because they have been concentrated and segregated there for more than a century ([Bolin, Grineski, and Collins 2005](#)). Urban core neighborhoods are several degrees warmer than the suburbs and outlying rural areas due to the urban heat island that is created by the vast expanses of paved parking lots, asphalt roads, and buildings that have replaced naturally vegetated land cover ([Arnfield 2003](#)).

Compared to wealthier, white neighborhoods in Phoenix, the inner city scores higher on a heat stress index, has more heat-related deaths, and has lower levels of coping resources, such as social networks, trees and parks, functioning and affordable air conditioning, and quality housing ([Harlan et al. 2006, 2013](#)). The mosaic of many different temperatures across residential neighborhoods combined with related inequalities in the built and social environments in the city is a human-made “heat riskscape”—a global problem that is

projected to become even more serious due to the expansion of cities ([Georgescu et al. 2014](#)) and projected higher urban temperatures under global climate change (e.g., [Li, Horton, and Kinney 2013](#)).

Women and men occupy different spaces in economies—material (work) and moral (respectability)—that define their worth in society and position them differently, making women more vulnerable than men to many meteorological disasters related to climate change ([Nagel 2012, 2015](#)). [Brody, Demetriades, and Esplen \(2008a:3–4\)](#) report that climate-related exposures to water-borne diseases during floods and hyperthermia during heat waves disproportionately affect women caretakers and children and the elderly of all genders. Estimates of population displacements from climate change (sea level rise, storm surges and flooding, drought, resource conflict) range from 25 million to a billion people worldwide by 2050, with most estimates around 200 million ([Laczko and Aghazarm 2009:9](#)). These displacements are expected to affect women disproportionately because of their child-caring responsibilities, limited land rights, dependency on subsistence agriculture, and generally impoverished and disadvantaged status in many countries ([United Nations WomenWatch 2009](#)). For example, the International Federation of Red Cross and Red Crescent Societies estimated that of the approximately 140,000 killed in the 1991 cyclone in Bangladesh, 90 percent were women and children ([Schmuck 2002](#)). Bangladesh is one of the few countries in the world where men live longer than women, and [Cannon \(2002\)](#) argues that women's poverty and vulnerability to weather-related flooding are among the reasons why (see also [Begum 1993](#)).

Women's domestic responsibilities and cultural expectations for their modesty can make them especially vulnerable to extreme weather events, particularly in the case of hydro-meteorological disasters such as floods or storm surges ([Spring 2006](#)). A number of material and moral economic factors combined to make Bangladeshi women especially vulnerable when the waters rose in 1991. They were responsible for the home—caring for children; finding food,

water, and fuel; cooking meals; growing crops; tending livestock—which tied poor women to low-lying residences. Their mobility was limited by cultural definitions of women’s proper dress, demeanor, and public visibility—their long, loose clothing restricted movement; they were ashamed to seek higher ground occupied by unrelated men; they could not swim. Women’s relative poverty made them less resilient—they had poor nutrition, poor health care, and limited family support since divorced and widowed women were discouraged from remarrying ([Cannon 2002](#)). Vulnerabilities to the effects of climate change—health hazards from producing and consuming energy and from extreme weather—are evident around the globe, within Global South nations, in communities of color and Indigenous communities, among women, and even in places in the Global North where “cleaner” energy technologies are available. These trends speak to the need to understand complex social and historical forces that underlie and often maintain and exacerbate inequality, layering climate injustices on top of past wrongs in society.

Politics and Just Policies for Managing Climate Change

How should we decide what to do to address the injustices inherent in the current set of causes and impacts of climate change? What kinds of actions are equitable and might amend past wrongs, and what types of actions are likely to make the consequences of climate change worse for future generations and those with less power and wealth? In this section, we address these policy questions about climate justice.

Mitigation and Adaptation Policies Raise Concerns About Climate Justice

At the international level, in the attempt to avoid the worst impacts of climate change, treaty negotiations have focused

almost exclusively on *mitigation*, or reducing GHG emissions, with very little effort until recently directed toward *adaptation* to the changing climate (Khan and Roberts 2013). The United Nations Framework Convention on Climate Change (UNFCCC) (1992) declared that parties should “avoid dangerous climate change,” acting according to principles of equity and their “common but differentiated responsibility and respective capabilities,” meaning that the wealthy and those who caused the problem should act first. It did not stipulate how principles of climate justice should be applied to mitigation—that is, whether nations should be assigned shares of allowable emissions based on a global emissions budget, whether remedial damages should be assessed for past emissions, whether “loss and damage” (those climate-related events that cannot be readily adapted to) should be compensated directly, or how any of these decisions should be made (Vanderheiden 2013). That is, the design and implementation of specific strategies to protect the world’s vulnerable populations from climate harm were left to international negotiations, which are now into their third contentious decade (Roberts, Ciplet, and Khan 2015). Most activists in the international climate justice movement, as well as in the United States, have advocated for equal per capita emission allowances across nations that include a nation’s historical responsibility for atmospheric disruption (see, e.g., Hallstrom 2012). In particular, the “Contraction and Convergence” model was proposed by the Global Commons Institute in the early 1990s (Meyer 2000). Rather than commit to a leveling approach, however, government negotiators adopted a “grandfathering” scheme of burden sharing that gave current emitters rights to continue at similar levels as historically, but with reductions averaging 5 percent. The main strategy for mitigation endorsed by the 1997 Kyoto Protocol, the first and only international treaty to place binding limits on emissions, is to place a cap on carbon emissions in wealthy nations. This framework allows them to trade permits with other nations and/or firms (i.e., cap-and-trade), including the damaged but still functioning Clean Development Mechanism (CDM).¹ After a few years of uncertainty, cap-and-trade systems are expanding again with

their adoption across China and possible expansions in Canada and the United States, among other places ([Newell, Pizer, and Raimi 2014](#)).

There are many distributive and procedural justice issues that arise with cap-and-trade that relate directly to the core questions of this chapter. International climate justice groups in the Climate Justice Now! network have taken a hard stand against carbon trading of any sort, believing it is morally bankrupt to commodify the air we breathe and charging that trading systems have quickly become corrupt or ineffective (e.g., [Clifton 2009](#); [Lohmann 2012](#)). Moreover, while leaders and citizens of many poor nations seek compensation for the ecological and economic harms associated with climate damage, some developing-nation NGOs have expressed concern that compensation could serve as a way for industrialized nations to “buy” the right to continue to emit and that, due to corruption, no compensation will reach the needy.²

After the 2009 Copenhagen negotiations at the COP 15 (Fifteenth Annual UN Conference of the Parties) failed to fully extend the Kyoto system, nations have continued to pull in different directions as they assert different interpretations of equitable allowances for emissions. India wants a “climate debt” formula for emissions targets, taking into account its historically low level of emissions, but this is adamantly opposed by the United States. China makes an argument that it has the right to develop economically and therefore a right to continue emitting GHGs ([Winkler et al. 2011](#)). The Copenhagen Accord took the modest level of binding emissions off the table in favor of a bottom-up “pledge and review” system favored by the United States and the rapidly developing countries in the BASIC (Brazil, South Africa, India, and China) negotiating group. The weakness of such negotiating positions and current agreements is that they lead directly to emissions that far exceed the 1992 agreement to “avoid dangerous climate change,” which is widely accepted as limiting global mean temperature rise to 2 degrees Celsius (United Nations Environment Programme 2010). The vast inequalities between Global North and South nations with regard to information, accessibility, technical

expertise, and attorneys produce further difficulties for negotiating fair treaties on sustainable climate policy based on a democratic process (e.g., [Roberts and Parks 2007](#)). The foundering of UN COP negotiations on limiting emissions has led to proposals by various national and substate actors to intervene in the climate cycle by removing carbon from the atmosphere with geoengineering projects that aim to stop or reverse global warming by technical means. There are proposals, for example, to pump sulfate aerosols into the atmosphere to deflect incoming solar heat and cool the Earth or to seed ocean algae beds to increase their carbon absorptive capacity ([Gardiner 2013](#); [Hallstrom 2012](#)). Many social scientists, ethicists, and others recognize a variety of problems with these kinds of schemes. They are likely to be expensive and ineffectual, they might relegate any plans to mitigate or reduce greenhouse gases to the back burner, and they might create rather than forestall a climate disaster. Moreover, some argue that geoengineering is a unilateral, militaristic approach to the problem because they are large-scale projects potentially undertaken by one country but influencing the global environmental system. Most usefully for our review, philosopher [Stephen Gardiner \(2013\)](#) has raised important procedural justice questions concerning geoengineering, such as whether it encourages the current generation to harm future ones by relieving the immediate necessity to control emissions. Will it result in greater subjugation of poor nations by rich nations that have the technological means to impose these potentially dangerous solutions on all global citizens without their consent? Who has a right to control the Earth's common space? Two things that geoengineering projects have in common with mitigation strategies are that they are not necessarily decided democratically and they are expressly not designed to redress the uneven distribution of harmful impacts of climate disruption on vulnerable populations. As the number of options for climate engineering increase, however, a review by sociologist Rachael Shwom and interdisciplinary colleagues concluded that while reducing emissions is still most desirable, forest and soil management for carbon storage raised the fewest ethical concerns among

engineering interventions ([Cusack et al. 2014](#)).

Some social science critics of top-down technological fixes for managing climate change are actively engaged in scholarship that provides a different set of priorities for *adapting* to climate change, or preparing to live with a destabilized climate system by reducing vulnerability to its harmful effects. Article 4 of the UNFCCC directs the wealthy nations, whose industrial activities are responsible for climate change, to help developing countries “that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects.” In the last decade there has been gradual recognition that many impacts from the changing climate are now inevitable and that, therefore, adaptation plans are urgently needed ([Khan and Roberts 2013](#)).

Proposals for different types of climate adaptations have huge justice implications because the costs and benefits of individual and collective actions can be distributed in ways that amplify risks for vulnerable groups and benefit those that are socially and economically more capable of dealing with climate change ([Adger, Paavoli, and Huq 2006](#)). One of the most important and difficult issues is ensuring that mitigation strategies do not impede adaptations of vulnerable populations in developing nations or in certain communities of industrialized countries. From a justice standpoint, marginalized groups must be recognized as having a *right to participate* in negotiations and a *right to increase their capabilities* to survive and thrive in the future.

There are significant justice challenges concerning who participates in choices among alternative adaptations. Stakeholders from underrepresented groups are usually not at the negotiating table, whether the forum is an international or local assembly. For example, women are important producers of the world’s staple food crops, working mostly as small farmers in the Global South ([Brody, Demetriades, and Esplen 2008b](#)), but female small-scale farmers are seldom included in fora that make policies designed to address the impact of climate change on agriculture.

Domestically, the climate disaster of Hurricane Katrina that

devastated New Orleans, Louisiana, and much of the Gulf Coast Region in August 2005 is a good example of inequality in adaptive capacity between white and African-American neighborhoods, the latter being poorly protected from potential storms. Katrina's flooding was followed by a rebuilding period that excluded elements of the community from decision making based on race and class. With over 1,800 people killed, thousands displaced, and billions of dollars in damage to infrastructure and housing, most of the official plans for rebuilding the city reflected long and deep racial and class divisions and revealed the limitations of local, state, and federal governmental efforts to implement emergency response plans. According to many activists and scholars, this constituted a "second disaster" that included discriminatory and exclusionary practices directed at African Americans and low-income populations seeking financial assistance, small business loans, FEMA grants, insurance settlements, jobs, access to housing, and constitutional protection for voting rights. Conversely, the "rebuilding" plans were seen to focus on supporting elite, white, and wealthier residents and businesses in the area (Holt 2014). As Desmond Tutu wrote in an introduction to the 2007 UN *Human Development Report*, inequality in adaptation to climate change opens a whole new realm of injustice and inequity:

No community with a sense of justice, compassion or respect for basic human rights should accept the current pattern of adaptation. Leaving the world's poor to sink or swim with their own meager resources in the face of the threat posed by climate change is morally wrong. Unfortunately ... this is precisely what is happening. We are drifting into a world of "adaptation apartheid." (cited in Hall and Weiss 2012).

Rethinking Climate Change Policy with Justice at the Core

Justly enhancing adaptive capacity and resiliency is an

increasingly important response to climate change because it deals with the ability of affected units at multiple scales (households, neighborhoods, cities, countries, or the entire global ecosystem) to withstand and recover from the stresses and shocks of environmental change ([Smit and Wandel 2006](#)). In recognition of this complexity, some social scientists and activists are moving beyond the UNFCCC's focus on global carbon trading to new ways of understanding the interdependence of human society and the functioning of Earth systems in diverse local settings.

For example, more radical critics of mainstream approaches say scientific representations of climate change separate the scientific "facts," statistics, and models from places and time scales that humans can understand and act on. [Sheila Jasanoff \(2010:249\)](#) writes,

The institutions through which climate knowledge is produced and validated (most notably, the IPCC) have operated in largely uncharted territory, in accordance with no shared, pre-articulated commitments about the right ways to interpret or act upon nature. The resulting representations of the climate have become decoupled from most modern systems of experience and understanding.

In a similar vein, sociologist [Thomas Rudel \(2009:130\)](#) describes how "land change" researchers identify "drivers" of land use change but produce "disembodied, ahistorical explanations" that could be improved by sociological approaches that "identify who transforms landscapes and when the transformations take place."

By making climate change an abstraction that occurs "everywhere and nowhere," it becomes a specialized area of scientific knowledge that has no cultural meaning ([Jasanoff 2010](#)). It is inaccessible to most people who need to have a voice in decision making and governmental actions to protect the environment, both global and local, as well as the freedom to decide how to live with climate threats. Patricia Romero Lankao, sociologist and co-author of the Fourth and Fifth Assessment IPCC Working Group II reports, believes

bottom-up scientists (e.g., those who study communities) need to be heard on the necessity of understanding real-world priorities and constraints that limit local adaptive capacity.

[Salleh \(2010\)](#) argues for an integrated socio-ecological approach to the complexity of climate change and environmental justice through an understanding of how healthy local ecosystems—plants, soil, water, and temperature—function and how social justice can be achieved by democratizing control of decision making about resources. Salleh’s position incorporates the procedural dimension of environmental justice by positioning local struggles as the focus of decision making about climate adaptations rather than relying on reductionist scientific models of global change that are not based on vulnerability assessments or local knowledge. It also differentiates approaches to climate vulnerability and adaptation focused on justice from those examining it from a perspective of improving “governance,” as is frequently the case with political science and public policy studies of the area.

[Agyeman’s \(2005\)](#) work on “just sustainability” attempts to forge a new paradigm by melding a definition of sustainability that is only focused on the durability of the natural environment with an environmental justice tradition that seeks fairness in the treatment of people. Sociologists [McLaughlin and Dietz \(2008\)](#) recommend that scientific disciplines move toward a new theoretical synthesis of vulnerability that promotes the study of social and ecological diversity, multiple paths of change, and the dynamics of adaptation in historical and future local contexts. Sociology and interpretive social sciences have the potential to make major contributions to framing climate change as a scientific problem with cultural meaning and pathways toward reducing human and environmental impacts.

Some social scientists have joined environmental and Indigenous activists in pushing for more transformative and grassroots-driven approaches to climate change. Those in environmental movements believe that the core elements of our economic system created climate change, and that solutions must come from outside of that system ([Angus](#)

2009; Clifton 2009; Rising Tide North America and Carbon Trade Watch n.d.). These calls to action, generally spearheaded by NGOs, involve many different local, national, and Indigenous organizations in global coalition building to demand recognition and participation in decision making about natural resources.³

Many leaders of Indigenous communities in the United States and around the world assert that their populations, cultures, traditions, and potential contributions are consistently excluded from the highest levels of climate change policymaking. They have demanded recognition of aboriginal peoples' rights under international law, their roles as stewards of ecosystems, the inherent value of traditional ecological knowledge, and their position on the front lines of climate disruption and in forging environmentally sustainable solutions. In April 2009, Indigenous representatives to the Indigenous Peoples' Global Summit on Climate Change produced the [Anchorage Declaration \(2009\)](#), which calls upon the UNFCCC to recognize the role of traditional ecological knowledge among Indigenous communities as a means of moving toward climate solutions. The Declaration demanded that nation states uphold existing treaty agreements in future climate mitigation strategies and land use planning.⁴

There is a growing activist literature by NGOs like the [Indigenous Environmental Network \(2009\)](#) that labels many of the policies reviewed in this chapter and elsewhere as "false solutions" to climate change, including large-scale dams, geoengineering techniques, "clean coal," agro-fuels (or biofuels), and tree plantations. Privatizing and marketizing ecological services through policies such as the CDM and Reducing Emissions from Deforestation and Land Degradation in Developing Countries (REDD+) are seen as empowering states and investors while disempowering local communities. Thus there is an ongoing debate among many activist groups over whether existing policy safeguards can adequately balance the highly uneven power relations among communities, nation-states, and corporate actors vying for influence across various climate change policy initiatives. Therefore, some climate justice leaders call for a focus on the root social, ecological, political, and economic causes of the

climate crisis, seeking a systemic transformation of societies (e.g., [Angus 2009](#)). For example the international anti-dam movement advocates for more sustainable, equitable, and efficient technologies and management practices for rivers, and more transparent and democratic decision-making processes for river projects. It also advocates for affordable, community-based methods of providing water and energy to the millions of people currently without access to these essentials. Some local struggles for environmental justice have forged alliances with national and international environmental organizations such as Earth First!, Rainforest Action Network, and the Sierra Club. Many coal field activists in central Appalachia express their agenda and goals as being inextricably tied to the climate justice movement. One organization whose stated mission is to end mountaintop removal coal mining calls itself “Climate Ground Zero.” “Fenceline” environmental justice communities are increasingly tying their struggles to climate change ([Stephenson 2014](#)).

In April 2010, 20,000 activists from around the world met in Cochabamba, Bolivia, for the World People’s Conference on Climate Change and the Rights of Mother Earth. They named capitalism as the core problem and Indigenous cultural and economic arrangements as a solution. These developments have many implications with regard to the link between environmental justice and citizenship. The environmental justice movement and other grassroots movements are expanding citizenship for marginalized people, for nonhuman animals, and for the Earth itself. For example, Ecuador announced in 2008 a revised constitution that affords the Earth and nature constitutional rights. One passage in the law says that nature “has the right to exist, persist, maintain and regenerate its vital cycles, structure, functions and its processes in evolution.” The aim is to create legal systems “that change the status of ecosystems from being regarded as property under the law to being recognized as rights-bearing entities” ([Revkin 2008](#)).

Nation-state representatives at the UN COP 20 meeting in Lima, Peru, in December 2014 replicated previous tense COP negotiations about financing, technology transfer, and

metrics for measuring carbon reductions. They produced a compromise agreement that encourages but does not require specific targets for national reductions and contains no guarantee of new funds to support climate adaptation in poorer countries (Jacobs 2014; UNFCCC 2014). Meanwhile, more than three dozen civil society groups articulated a vision statement for a world marked by “a transformation of energy systems, away from fossil fuels, towards access to decentralised, renewable, safe, community controlled energy systems for all” (Friends of the Earth 2014). International NGOs and civil society groups from around the globe declared that they would redouble their efforts to force nation-states and fossil fuel industries to ensure that the Global North cuts 70 percent of carbon emissions over the next decade, focusing radical mitigation efforts on “the richest several percent of the world population” without relying on ineffectual market solutions (Foran, Ellis, and Grey 2014). The tensions and divisions between those authorized to participate in climate negotiations and those outside the proceedings suggest not only a gulf in vision and resources between different stakeholders but a disconnect between those who are “seeing like a state” (Scott 1999) and those who experience the realities of climate change on the ground every day. Sociologists such as John Foran contribute to theory building and practice by shedding light on the process and outcomes of climate justice movements.

Ultimately, any effort to address the impacts of climate change must contend with the underlying problem of the growth imperative that is inherent to global capitalism. The main premise of a capitalist system of commerce rests on the assumption that an economy can achieve and sustain infinite growth (Gould et al. 1996). Of course, this is simply impossible in an ecological system with finite resources, yet our political and economic institutions behave as if this were not the case.

Contributions of Sociology: A Way Forward in Climate Change Research and Policy

The discipline of sociology is pivotal in studying the unequal impacts of climate change because sociology's core intellectual problems center on disparities in power, wealth, and privilege. Sociologists have made two broad contributions toward relating inequality to climate justice. One is to scholarship that defines and measures unequal contributions to the causes of climate change and its unjust impacts, including justice implications of current proposals to control and manage climate change. This work covers theoretical treatments of justice and the social structures that create and maintain inequality and injustice, empirical case studies of local communities, and international negotiations on carbon emissions.

Having studied inequalities for more than a century, sociologists are currently relating problems of climate justice to class, race, gender, and other dimensions of institutionalized and intersecting inequalities in everyday lives. These studies illuminate, among other things, how the life cycle of energy production and weather disasters affect people's health and livelihoods in all kinds of local social-environmental contexts, from Appalachia to New Orleans to Bangladesh and Kenya. Drawing upon world systems theory and the related concept of unequal ecological exchange, sociologists have associated the "drivers" or causes of climate change with historically rooted power and wealth inequalities between nations that are impediments to economic change in the Global North and barriers to attaining climate justice in the Global South. Some of these scholarly examinations have had profound impacts upon climate policymaking, especially in driving the discourse to consider justice and the needs of the most vulnerable.

Sociology's second contribution is bridging the social sciences and social movements by studying grassroots organizations advocating climate justice. This scholarship has brought a nuanced and multifaceted set of justice principles

into mainstream, narrow policy discourses and stimulated new lines of thinking about how climate change might be addressed in a profoundly different way. Sociologists have decades of experience in studying the beliefs, methods, and strategies of social movements, which they often see as the only force in society capable of driving sufficient action on an issue like climate change (Roberts et al. 2015). They have investigated the social forces that produce, influence, support, oppose, destabilize, and destroy social movements. Knowledge gained from studying organizations of all sorts—international, national, state, and local bureaucracies, small and large firms, and radical and mainstream social movement organizations—has been applied to understanding the organizations that both manage and protest the new global threat of climate change. Rather than imagining that minor tweaks to institutions could improve the situation (as political scientists in the Institutional School suggest), sociologists frequently conclude that this issue is being malgoverned for the self-interest of powerful actors. The failure of moderate “Earth System Governance” (see, e.g., Biermann 2009) approaches to muster an adequate response to climate change brings new urgency and legitimacy to this aspect of sociology’s inclination to study and herald the grassroots. Sociologists have participated in formative events around the development of climate science *and* the concept of “climate justice”; not many disciplines can make that claim.

Sociologists have done independent research, co-authored scientific assessments, acted as advisors to governments and UN negotiating groups, organized pivotal conferences on climate justice, and worked with activists and NGOs, expanding the scope and capacity of both sets of partners. As has been touched upon in this chapter, by providing research tools to examine claims of disproportionate impacts and contributing to theories of just process and outcomes, the field of sociology provides insights on why many proposals for dealing with the climate crisis are recipes for failure in achieving social justice.

Sociologists can build upon this work to make many more contributions to scholarship on climate inequalities and injustices. It is quite difficult to predict the many directions in

which sociology's diverse scholars and public sociologists will take their work. Still, we see some promising areas for expansion, both scholarly and engaged:

1. More sociologists could apply theories of inequality and injustice to data on environmental change, and on climate change in particular, by using existing research tools to explain GHG emissions and unequal climate impacts as dependent variables at the individual, household, neighborhood, community, regional, national, and global levels.
2. Sociologists could press for positioning inequality and injustice at the center of environmental assessments such as the IPCC reports ([Intergovernmental Panel on Climate Change 2014](#)) and the [National Climate Assessment \(2014\)](#). They should also seek to serve and support social science representation on local, state, national, and international climate science and policy boards.
3. Sociologists can advance this repositioning effort by providing research that demonstrates how inequalities in consumption and production are responsible for climate injustices between and within nations and subnational groups, and how understanding these inequalities provides new routes for addressing climate change. Assessments like the IPCC can only cite research published in peer-reviewed journals, and the assessment authors' gaze is fixed on major natural science journals such as *Nature*, *Science*, and *Proceedings of the National Academy of Sciences (PNAS)*. Therefore sociologists should address audiences in those outlets.
4. Sociologists can produce high-quality case studies of vulnerable populations in vulnerable places that link macro processes (like economic and global atmospheric change) with finer-scale local contextual analyses. Relatedly, more studies are needed on human agency and capability in responding to or recovering from disasters and to the socioeconomic and cultural

characteristics that enhance or deter abilities to respond. Better measures and indicators for comparing the effects of disasters in terms of human life, economic loss, and foregone opportunities are needed to inform adaptation policies and interventions at the local, state, national, and international levels.

5. Building upon social movement, political, and political economy theories, sociology can contribute to theory building and practice by shedding light on when climate justice movements succeed and fail. It can identify the barriers social movements and unorganized groups face in addressing climate justice, and the key coalition partners and external supporters that prove decisive for success. And sociology can identify pathways to success in complex social conjunctures. This work should deal with the opportunities and challenges of organizing transnationally and of facing adversaries such as global fossil fuel corporations that are not accountable to a particular national constituency. The literature on the globalization of social movements offers a strong starting point here.
6. Sociologists can participate in developing just interventions and provide a vision for mitigation and adaptation programs that include voices of workers and other vulnerable communities in a “just transition” to low-carbon and resilient societies. Sociologists can engage by working with frontline community action organizations and city, state, and national agencies to identify and communicate with climate-vulnerable groups, and by helping co-develop outreach and communication strategies for incorporating their needs into public policies. Sociological research on organizations and social movements will become even more important in the future as human institutions—households, cities, nations, and intergovernmental organizations—continue to struggle with problems created and exacerbated by climate injustices.

7. Finally, sociologists can question the implicit and explicit commitment to economic growth in all policy debates surrounding climate disruption. Belief that growth will address and overcome social inequality is an article of faith in the United States and many other societies around the world, in spite of mountains of sociological research disconfirming that hypothesis. The growth of the global economy means consumption of an ever-increasing amount of goods, which require an ever-increasing amount of energy, mineral, agricultural, and forest resources. New definitions of social development are needed that capture progress that can be “decoupled” from carbon emissions ([Jorgenson and Clark 2012](#); [Steinberger and Roberts 2010](#); see also [York, Rosa, and Dietz 2003](#)).

Sociologists bring an essential and unique toolkit to explore, explain, and help society address climate inequality and injustice. Our field, however, needs to initiate and foster interdisciplinary cooperation in the development of new theory, methods, and substance. Human geography, ecology, political science, communications, psychology, and economics are obvious places to begin, but finding common ground (by developing common language and collaborative projects) with the vast fields of biology, geosciences, and engineering is crucial for sociology to help move forward a global agenda to limit climate change. A major challenge is creating a global paradigm to supplant unrestrained economic growth—a new paradigm that is rooted in meeting human needs equitably while also respecting the Earth’s finite capacity to sustain healthy ecosystems. To meet this challenge, we need to ask how it can be possible for the principles of climate justice to serve as the guide for policymakers as they begin seriously to weigh options for drastically decarbonizing society and adapting to the inevitable climate disruptions we face.

Notes

- 1 Kyoto does not apply to the United States and Australia, which

have not ratified the treaty. The CDM was to promote sustainable development in the Global South countries while allowing industrialized countries to earn emissions credits from their investments in emission-reducing projects in the South. The CDM allows Global North countries to purchase credits from Southern nations that reduce carbon emissions. Those Northern countries can then use or sell those credits in the North. According to microeconomic theory, given perfect information and fair trading, the polluters who can reduce emissions most cost-effectively should do so, and sell permits to industries whose whole ability to function in a globally competitive economy might be at risk from having to make substantial reductions in carbon emissions.

- 2 A recent national case study of seventy-five Kenyan environmental NGOs shows that civil society support for climate justice may be dampened due to mistrust of both the Global North and the national government ([Beer 2012](#)). Activists and scholars have argued that the CDM has removed much of the incentive to actually reduce emissions in the North, and that it has failed to deliver the promised sustainable development benefits. Most CDM credits have been captured by Chinese chemical industries installing fairly low-cost equipment to capture CFCs and N-gases—both are GHGs that have huge multipliers in the CDM credits they generate. Large-scale projects in Brazil and India also have secured large amounts of the credits, while small nations and poor areas like Africa have been nearly entirely bypassed ([Hultman et al. 2009](#)). Developing-country governments are empowered to require sustainable development benefits of their CDM projects, but the successful host countries are those with extremely lax criteria for what that means ([Cole 2009](#)).
- 3 The Bali Principles of Climate Justice, using a blueprint of environmental justice principles developed at the 1991 First National People of Color Environmental Leadership Summit, was the first attempt to define climate change as a human rights and environmental justice issue ([International Climate Justice Network 2002](#)). The principles consider the causes of climate change and offer a far-reaching vision for fair solutions.
- 4 One of the demands articulated in this statement was that the UNFCCC adhere to the United Nations Declaration on the Rights of Indigenous People. Leaders also demanded that this declaration be fully recognized and respected in all decision-making processes and activities related to climate disruption policy at the UNFCCC.

References

Acción Ecológica. 2000. "Trade, Climate Change and the Ecological Debt." Unpublished paper, Quito, Ecuador.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Addams, Jane. 1896. "A Belated Industry." *American Journal of Sociology* 1(5):536–550.

[Google Scholar](#) [WorldCat](#)

Addams, Jane. 1899. "Trade Unions and Public Duty." *American Journal of Sociology* 4(4):448–462.

[Google Scholar](#) [WorldCat](#)

Adger, N. W., J. Paavoli, and S. Huq (Eds.). 2006. *Fairness in Adaptation to Climate Change*. Cambridge, MA: MIT Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Agyeman, Julian. 2005. *Sustainable Communities and the Challenge of Environmental Justice*. New York: New York University Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Ahern, M. M., M. Hendryx, J. Conley, E. Fedorko, A. Ducatman, and K. J. Zullig. 2011. "The Association between Mountaintop Mining and Birth Defects among Live Births in Central Appalachia, 1996–2003." *Environmental Research* 111(6):838–846.

[Google Scholar](#) [WorldCat](#)

Amin, Samir. 1974. *Accumulation on a World Scale*, 2 vols. New York: Monthly Review Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Anchorage Declaration. 2009. *Indigenous People's Global Summit on Climate Change*. April 24, Anchorage, Alaska. Retrieved October 28, 2013 (<http://unfccc.int/resource/docs/2009/smsn/ngo/168.pdf>).

[WorldCat](#)

Anderson, Margaret and Patricia Hill Collins. 2006. *Race, Class, and Gender: An Anthology*. Boston, MA: Wadsworth.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Angus, Ian. 2009. *The Global Fight for Climate Justice: Anticapitalist*

Responses to Global Warming and Environmental Destruction. London: Resistance Books.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Arnfield, A. J. 2003. "Two Decades of Urban Climate Research: A Review of Turbulence, Exchanges of Energy and Water, and the Urban Heat Island." *International Journal of Climatology* 23:1–26.

[Google Scholar](#) [WorldCat](#)

Austin, K. F. 2010. "Soybean Exports and Deforestation from a World-systems Perspective: A Cross-national Investigation of Comparative Disadvantage." *Sociological Quarterly* 51(3):511–536.

[Google Scholar](#) [WorldCat](#)

Banerjee, Damayanti. 2010. "*Justice as Rights: Revisiting Environmental Justice Theory*." Paper presented at the Annual Meetings of the American Sociological Association, August, Atlanta, GA.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Been, Vicki. 1994. "Locally Undesirable Land Uses in Minority Neighborhoods: Disparate Siting or Market Dynamics?" *Yale Law Journal* 103:1383.

[Google Scholar](#) [WorldCat](#)

Beer, Christopher Todd. 2012. "*The Influence of Transnational Actors on Kenyan Environmental NGOs*." Doctoral dissertation. Department of Sociology, Indiana University, Bloomington, Indiana.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Begum, Rasheda. 1993. "Women in Environmental Disasters: the 1991 Cyclone in Bangladesh." *Gender and Development* 1:34–49.

[Google Scholar](#) [WorldCat](#)

Bell, Michael M. 2013. *An Invitation to Environmental Sociology*. 4th ed. Boulder, CO: Pine Forge Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Bell, Shannon Elizabeth. 2013. *Our Roots Run Deep as Ironweed: Appalachian Women and the Fight for Environmental Justice*. Chicago and Urbana: University of Illinois Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Bell, Shannon E. and Richard York. 2010. "Community Economic

Identity: The Coal Industry and Ideology Construction in West Virginia.”

Rural Sociology 75(1):111–143.

[Google Scholar](#) [WorldCat](#)

Bell, Shannon E. and Richard York. 2012. “Coal, Injustice, and Environmental Destruction: Introduction to the Special Issue on Coal and the Environment.” *Organization & Environment* 25(4):359–367.

[Google Scholar](#) [WorldCat](#)

Biermann, Frank. 2009. *Earth System Governance: People, Places, and the Planet: Science and Implementation Plan of the Earth System Governance Project*. IDEP, The Earth System Governance Project.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Black Leadership Forum, The Southern Organizing Committee for Economic and Social Justice, The Georgia Coalition for the Peoples’ Agenda, and Clear the Air. 2002. *Air of Injustice: African Americans and Power Plant Pollution*. Retrieved October 28, 2013

(http://www.energyjustice.net/files/coal/Air_of_Injustice.pdf).

[WorldCat](#)

Bolin, Bob, Sara Grineski, and Timothy Collins. 2005. “The Geography of Despair: Environmental Racism and the Making of South Phoenix, Arizona, USA.” *Human Ecology Review* 12(2):156–168.

[Google Scholar](#) [WorldCat](#)

Bolin, R. and L. Sanford. 1998. *The Northridge Earthquake: Vulnerability and Disaster*. New York: Routledge.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Bonds, Eric and Liam Downey. 2012. “‘Green’ Technology and Ecologically Unequal Exchange: The Environmental and Social Consequences of Ecological Modernization in the World-system.” *Journal of World Systems Research* 18(2):167–186.

[Google Scholar](#) [WorldCat](#)

Braithwaite, J. 1999. “Restorative Justice: Assessing Optimistic and Pessimistic Accounts.” Pp. 1–127 in *Crime and Justice: A Review of Research*, edited by M. Tonry and N. Morris. Chicago: University of Chicago Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Brody, Alyson, Justina Demetriades, and Emily Esplen. 2008a. *Gender*

and Climate Change: Mapping the Linkages—A Scoping Study on Knowledge and Gaps. Institute of Development Studies (IDS), University of Sussex. Retrieved June 26, 2011 (http://www.bridge.ids.ac.uk/reports/Climate_Change_DFID.pdf).
WorldCat

Brody, Alyson, Justina Demetriades, and Emily Esplen. 2008b. "Gender and Desertification: Expanding Roles for Women to Restore Dryland Areas." Institute of Development Studies (IDS), University of Sussex. Retrieved April 10, 2009 (http://www.ifad.org/pub/gender/desert/gender_desert.pdf).
WorldCat

Broome, John. 2012. *Climate Matters: Ethics in a Warming World*. New York: W.W. Norton.
Google Scholar Google Preview WorldCat COPAC

Bulle, Robert J. and David N. Pellow. 2006. "Environmental Justice: Human Health and Environmental Inequalities." *Annual Review of Public Health* April 27:103–124.
Google Scholar WorldCat

Bruyneel, K. 2007. *The Third Space of Sovereignty: The Postcolonial Politics of U.S.–Indigenous Relations*. Minneapolis: University of Minnesota Press.
Google Scholar Google Preview WorldCat COPAC

Bulkeley, H., J. Carmin, V. C. Broto, G. A. S. Edwards, and S. Fuller. 2013. "Climate Justice and Global Cities: Mapping the Emerging Discourses." *Global Environmental Change* 23(3):914–925.
Google Scholar WorldCat

Bullard, Robert D. 2000. *Dumping in Dixie: Race, Class, and Environmental Quality*. Boulder, CO: Westview Press.
Google Scholar Google Preview WorldCat COPAC

Bullard, Robert D. and Beverly Wright. 2009. *Race, Place, and Environmental Justice after Hurricane Katrina*. Boulder, CO: Westview Press.
Google Scholar Google Preview WorldCat COPAC

Bunker, Stephen. 1985. "Modes of Extraction, Unequal Exchange, and the Progressive Underdevelopment of an Extreme Periphery: The Brazilian Amazon 1600–1980." *American Journal of Sociology*

89(5):1017–1064.

[Google Scholar](#) [WorldCat](#)

Bunker, Stephen G. and Paul S. Ciccantell. 2005. *Globalization and the Race for Resources*. Baltimore, MD: Johns Hopkins University Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Cannon, Terry. 2002. "Gender and Climate Hazards in Bangladesh." *Gender and Development* 10:45–50.

[Google Scholar](#) [WorldCat](#)

Clare, E. 2009. *Exile and Pride: Disability, Queerness & Liberation*. Boston, MA: South End Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Clifton, Sarah-Jayne. 2009. *A Dangerous Obsession: The Evidence Against Carbon Trading and for Real Solutions to Avoid a Climate Crunch*. UK: Friends of the Earth. Retrieved October 28, 2013 (http://www.foe.co.uk/resource/reports/dangerous_obsession.pdf).

[WorldCat](#)

Cole, John C. 2009. "The Clean Development Mechanism (CDM) and the Legal Geographies of Climate Policy in Brazil." Unpublished Doctoral Thesis, University of Oxford, Oxford, UK.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Collins, Patricia Hill. 2000. *Black Feminist Thought: Knowledge, Consciousness, and the Politics of Empowerment*. 2nd ed. New York: Routledge.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Congressional Black Caucus Foundation, Inc. 2004. *African Americans and Climate Change: An Unequal Burden*. July 21. Retrieved October 28, 2013 (http://rprogress.org/publications/2004/CBCF_REPORT_F.pdf).

[WorldCat](#)

CorpWatch. 2002. Bali Principles of Climate Justice. Retrieved June 4, 2014 (<http://www.corpwatch.org/article.php?id=3748>).

[WorldCat](#)

Crenshaw, Kimberle. [1991] 1994. "Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of

Color.” Pp. 93–118 in *The Public Nature of Private Violence*, edited by M. A. Fineman and R. Mykitiuk. New York: Routledge.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Crowder, Kyle and Liam Downey. 2010. “Inter-Neighborhood Migration, Race, and Environmental Hazards: Modeling Microlevel Processes of Environmental Inequality.” *American Journal of Sociology* 115(4):1110–1149.

[Google Scholar](#) [WorldCat](#)

Cusack, Daniela, Jonn Aksen, Rachael Shwom, Lauren Hartzell-Nichols, Sam White, and Katherine R. M. Mackey. 2014. “An Interdisciplinary Assessment of Climate Engineering Strategies.” *Frontiers in Ecology and the Environment* 12:280–287.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Cutter, S. L., L. Barnes, M. Berry, C. Burton, E. Evans, E. Tate, and J. Webb. 2008. “A Place-Based Model for Understanding Community Resilience to Natural Disasters.” *Global Environmental Change* 18:598–606.

[Google Scholar](#) [WorldCat](#)

Dale, John G. 2011. *Free Burma: Transnational Legal Action and Corporate Accountability*. Minneapolis: University of Minnesota Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Downey, Liam. 2006. “Environmental Racial Inequality in Detroit.” *Social Forces* 85(2):771–96.

[Google Scholar](#) [WorldCat](#)

Du Bois, W. E. B. 1899. *The Philadelphia Negro: A Social Study*. Philadelphia: University of Pennsylvania Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

International Climate Justice Network. 2002. *Bali Principles of Climate Justice*. Retrieved May 11, 2013 (<http://www.ejnet.org/ej/bali.pdf>).

[WorldCat](#)

Fearnside, Philip M. 2002. “Greenhouse Gas Emissions From a Hydroelectric Reservoir (Brazil’s Tucuruí Dam) and the Energy Policy Implications.” *Water, Air, and Soil Pollution* 133(1–4):69–96.

[Google Scholar](#) [WorldCat](#)

Fishman, Benjamin. 2006. “Binding Corporations to Human Rights

Norms through Public Law Settlement.” *New York University Law Review* 81(4):1433–1468.

[Google Scholar](#) [WorldCat](#)

Fitzgerald, A. and D. N. Pellow. 2014. “Ecological Defense for Animal Liberation: A Holistic Understanding of the World.” Pp. 28–48 in *Defining Critical Animal Studies: An Intersectional Social Justice Approach for Liberation*, edited by A. Nocella II, J. Sorenson, K. Socha, and A. Matsuoka. New York: Peter Lang Publishing.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Foran, John, Corrie Ellis, and Summer Gray (Eds.). 2014. *At the COP: Global Climate Justice Youth Speak Out*. E-book. Retrieved December 16, 2014 (<https://climatejusticeproject.files.wordpress.com/2014/12/foran-ellis-and-gray-2014-at-the-cop.pdf>).

[WorldCat](#)

Fraser, Nancy. 1996. *Justice Interruptus: Critical Reflections on the “Post Socialist” Condition*. New York: Routledge.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Fraser, Nancy. 2013. *Fortunes of Feminism: From State-Managed Capitalism to Neoliberal Crisis*. Brooklyn, NY: Verso.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Freudenburg, William R. 1992. “Addictive Economies: Extractive Industries and Vulnerable Localities in a Changing World Economy.” *Rural Sociology* 57(3):305–332.

[Google Scholar](#) [WorldCat](#)

Friends of the Earth. 2014. “No Justice in Lima Outcome. Lima 2014 Climate Justice Statement.” December 14. Retrieved December 16, 2014 (<http://www.foei.org/news/no-justice-in-lima-outcome/>).

[WorldCat](#)

Gaard, Greta. 2004. “Toward a Queer Ecofeminism.” Pp. 21–44 in *New Perspectives on Environmental Justice: Gender, Sexuality, and Activism*, edited by R. Stein. New Brunswick, NJ: Rutgers University Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Gardiner, Stephen M. 2013. “The Desperation Argument for Geoengineering.” *PS: Political Science & Politics* 46(1):28–33.

[Google Scholar](#) [WorldCat](#)

Gedicks, Al. 1993. *The New Resource Wars: Native and Environmental Struggles against Multinational Corporations*. Boston: South End Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Georgescu, Matei, Philip Morefield, Britta Bierwagen, and Christopher Weaver. 2014. "Urban Adaptation Can Roll Back Warming of Emerging Megapolitan Regions." *Proceedings of the National Academy of Sciences USA* 111 (8):2909–2914.

[Google Scholar](#) [WorldCat](#)

Giddens, Anthony. 1984. *The Constitution of Society: Outline of the Theory of Structuration*. Boston, MA: Polity Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Gould, Kenneth A., Allan Schnaiberg, and Adam S. Weinberg. 1996. *Local Environmental Struggles: Citizen Activism in the Treadmill of Production*. Cambridge: Cambridge University Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Grasso, Marco. 2010. "An Ethical Approach to Climate Adaptation Finance." *Global Environmental Change* 20(1):74–81.

[Google Scholar](#) [WorldCat](#)

Hall, Margaux J. and David C. Weiss. 2012. "Avoiding Adaptation Apartheid: Climate Change Adaptation and Human Rights Law." *Yale Journal of International Law* 37:309–366.

[Google Scholar](#) [WorldCat](#)

Hallstrom, Niclas (Ed.). 2012. Vol. 3. *What Next: Climate, Development and Equity*. Dag Hammarskjold Foundation and the What Next Forum.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Harlan, Sharon L., Anthony Brazel, Lela Prashad, William L. Stefanov, and Larissa Larsen. 2006. "Neighborhood Microclimates and Vulnerability to Heat Stress." *Social Science & Medicine* 63:2847–2863.

[Google Scholar](#) [WorldCat](#)

Harlan, Sharon L., Juan Declet-Barreto, William L. Stefanov, and Diana Petitti. 2013. "Neighborhood Effects on Heat Deaths: Social and Environmental Predictors of Vulnerability in Maricopa County, Arizona." *Environmental Health Perspectives* 121(2):197–204.

[Google Scholar](#) [WorldCat](#)

Harrison, J. L. 2011. *Pesticide Drift and the Pursuit of Environmental Justice*. Cambridge, MA: MIT Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Hayward, Clarissa Rile and Todd Swanstrom. 2011. *Justice and the American Metropolis*. Minneapolis: University of Minnesota Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Hendryx, M. 2008. "Mortality Rates in Appalachian Coal Mining Counties: 24 Years Behind the Nation." *Environmental Justice* 1(1):5–11.

[Google Scholar](#) [WorldCat](#)

Holdren, John. 2007. "Global Climate Disruption: What Do We Know? What Should We Do?" Presentation at Harvard University, November 6.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Holt, William. 2014. "Do You Know What it Means to Rebuild New Orleans? Cultural Sustainability After Disasters." Pp. 267–287 in *From Sustainable Cities: Global Concerns/Urban Efforts*, Vol. 15 in the Research in Urban Studies Series edited by W. Holt (R. Hutchinson, series editor). Bingley, UK: Emerald.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Hultman, Nathan E., Emily Boyd, J. Timmons Roberts, John Cole, Esteve Corbera, Johannes Ebeling, Katrina Brown, and Diana M. Liverman. 2009. "How Can the Clean Development Mechanism Better Contribute to Sustainable Development?" *AMBIO: A Journal of the Human Environment* 38 (2):120–122.

[Google Scholar](#) [WorldCat](#)

Indigenous Environmental Network. 2009. "Press Statement: Report Calls for the Rejection of REDD in Climate Treaty." Bangkok, Thailand, October 1. Retrieved October 28, 2013 (<http://www.youtube.com/watch?v=RavcHZIYDBI>).

[WorldCat](#)

Intergovernmental Panel on Climate Change (IPCC). 2014. *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by C. B. Field, V. R. Barros, D. J. Dokken, K. J. Mach,

M. D. Mastrandrea, T. E. Bilir, M. Chatterjee, K. L. Ebi, Y. O. Estrada, R. C. Genova, B. Girma, E. S. Kissel, A. N. Levy, S. MacCracken, P. R. Mastrandrea, and L. L. White. Cambridge and New York: Cambridge University Press. Retrieved December 9, 2014 (http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-FrontMatterA_FINAL.pdf).

[WorldCat](#)

Jacobs, Michael. 2014. "Lima Deal Represents a Fundamental Change in Global Climate Regime." *The Guardian*, December 15. Retrieved December 16, 2014 (<http://www.theguardian.com/environment/2014/dec/15/lima-deal-represents-a-fundamental-change-in-global-climate-regime>).

[WorldCat](#)

Jasanoff, Sheila. 2010. "A New Climate for Society." *Theory, Culture & Society* 27(2–3):233–253.

[Google Scholar](#) [WorldCat](#)

Jorgenson, Andrew K. and Ryan Birkholz. 2010. "Assessing the Causes of Anthropogenic Methane Emissions in Comparative Perspective, 1990–2005." *Ecological Economics* 69:2634–2643.

[Google Scholar](#) [WorldCat](#)

Jorgenson, Andrew K. and Brett Clark. 2012. "Are the Economy and the Environment Decoupling? A Comparative International Study, 1960–2005." *American Journal of Sociology* 118:1–44.

[Google Scholar](#) [WorldCat](#)

Jorgenson Andrew K., C. Dick, and J. M. Shandra. 2011. "World Economy, World Society, and Environmental Harm in Less Developed Countries." *Sociological Inquiry* 81(1):53–87.

[Google Scholar](#) [WorldCat](#)

Kalkstein, L. S. 1992. "Impacts of Global Warming on Human Health: Heat Stress-related Mortality." In *Global Climate Change: Implications, Challenges and Mitigating Measures*, edited by S. K. Majumdar, L. S. Kalkstein, B. Yarnal, E. W. Miller and L. M. Rosenfield. Philadelphia: Pennsylvania Academy of Science.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Kasperson, R. E. and J. X. Kasperson. 2001. *Climate Change, Vulnerability and Social Justice*. Stockholm Environment Institute, Risk and Vulnerability Programme, Stockholm, Sweden. Retrieved October

28, 2013 (<http://stc.umsl.edu/essj/unit4/climate%20change%20risk.pdf>).
[WorldCat](#)

Khan, Mizan and J. Timmons Roberts. 2013. "Towards a Binding Adaptation Regime: Three Levers and Two Instruments." In *Successful Adaptation*, edited by S. Moser and M. Boykoff. London: Routledge Publishers.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Klinenberg, Eric. 2002. *Heat Wave: A Social Autopsy of Disaster in Chicago*. Chicago: University of Chicago Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Laczko, Frank and Christine Aghazarm, eds. 2009. *Migration, Environment and Climate Change: Assessing the Evidence*. International Organization for Migration, Geneva, Switzerland. Retrieved June 26, 2011 (http://publications.iom.int/bookstore/free/migration_and_environment.pdf).

[WorldCat](#)

Lang, Chris. 2009. "Ogiek Threatened with Eviction from Mau Forest, Kenya." *REDD Monitor*. November 19. Retrieved October 28, 2013 (<http://www.redd-monitor.org/2009/11/19/ogiek-threatened-with-eviction-from-mau-forest-kenya/>).

[WorldCat](#)

Lawrence, P. 2014. *Justice for Future Generations: Climate Change and International Law*. Northampton, MA: Edward Elgar.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Li, Tiantian, Patrick Horton, and Patrick Kinney. 2013. "Projections of Seasonal Patterns in Temperature-related Deaths for Manhattan, New York." *Nature Climate Change* 3:717–721.

[Google Scholar](#) [WorldCat](#)

Logan, John and Harvey Molotch. 2007. *Urban Fortunes: The Political Economy of Place*. Berkeley: University of California Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Lohmann, L. 2012. "The Endless Algebra of Climate Markets." *Capitalism Nature Socialism* 22(4):93–116.

[Google Scholar](#) [WorldCat](#)

Malin, Stephanie. 2014. "There's No Real Choice But to Sign: Neoliberalization and Normalization of Hydraulic Fracturing on Pennsylvania Farmland." *Journal of Environmental Studies and Sciences* 4(1):17–27.

[Google Scholar](#) [WorldCat](#)

Martinez-Alier, Joan. 2003. "Marxism, Social Metabolism and Ecologically Unequal Exchange." Paper presented at Lund University Conference on World Systems Theory and the Environment, 19–22 September, Lund, Sweden.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Marx, Karl. 2000. *Das Kapital: A Critique of Political Economy*. Washington, DC: Regnery.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Massey, Douglas and Nancy Denton. 1993. *American Apartheid: Segregation and the Making of the American Underclass*. Cambridge, MA: Harvard University Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

McCully, Patrick. 2001. *Silenced Rivers: The Ecology and Politics of Large Dams*. London: Zed Books.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

McLaughlin, P. and T. Dietz. 2008. "Structure, Agency and Environment: Toward an Integrated Perspective on Vulnerability." *Global Environmental Change* 18:99–111.

[Google Scholar](#) [WorldCat](#)

Mennis, J. and L. Jordan. 2005. "The Distribution of Environmental Equity: Exploring Spatial Nonstationarity in Multivariate Models of Air Toxic Releases." *Annals of the Association of American Geographers* 95:249–68.

[Google Scholar](#) [WorldCat](#)

Meyer, Aubrey. 2000. *Contraction and Convergence: The Global Solution to Climate Change*. Cambridge: Green Books Ltd.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Mileti, D. 1999. *Disasters by Design: A Reassessment of Natural Hazards in the United States*. Washington, DC: Joseph Henry Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Mills, C. Wright. 1956. *The Power Elite*. New York: Oxford University Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Mohai, Paul, David N. Pellow, and J. Timmons Roberts. 2009. "Environmental Justice." *Annual Review of Environment and Resources* 34:405–430.

[Google Scholar](#) [WorldCat](#)

Mohai, Paul and R. Saha. 2006. "Reassessing Racial and Socioeconomic Disparities in Environmental Justice Research." *Demography* 43:383–399.

[Google Scholar](#) [WorldCat](#)

Nagel, Joane. 2012. "Intersecting Identities and Global Climate Change." *Identities: Global Studies in Culture and Power* 19(4):467–476.

[Google Scholar](#) [WorldCat](#)

Nagel, Joane. 2015. *Gender and Climate Change: Impacts, Science, Policy*. Boulder, CO: Paradigm Publishers.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

National Aeronautics and Space Administration (NASA). 2009. "The Second Native Peoples/Native Homelands Workshop." November 18, Prior Lakes, Minnesota.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

National Climate Assessment. 2014. U.S. Global Change Research Program, Washington, DC. Retrieved June 21, 2014 (<http://nca2014.globalchange.gov/report>).

[WorldCat](#)

Newell, Richard G., William A. Pizer, and Daniel Raimi. 2014. "Carbon Market Lessons and Global Policy Outlook." *Science* 343(6177):1316–1317.

[Google Scholar](#) [WorldCat](#)

O'Brien, Karen L. and Robin M. Leichenko. 2000. "Double Exposure: Assessing the Impacts of Climate Change within the Context of Economic Globalization." *Global Environmental Change* 10(3):221–232.

[Google Scholar](#) [WorldCat](#)

O'Neill, M., A. Zanobetti, and J. Schwartz. 2003. "Modifiers of the

Temperature and Mortality Association in Seven U.S. Cities.” *American Journal of Epidemiology* 157(12):1074–1082.

[Google Scholar](#) [WorldCat](#)

Orem, W. H. 2006. “*Coal Slurry: Geochemistry and Impacts on Human Health and Environmental Quality*.” U.S. Geological Survey, Eastern Energy Resources Team. PowerPoint Presentation to the Coal Slurry Legislative Subcommittee of the Senate Judiciary Committee, West Virginia Legislature, November 15.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Oxfam. 2014. “Working for the Few: Political Capture and Economic Inequality.” 178 Oxfam Briefing Paper. Retrieved June 24, 2014 (<http://www.oxfam.org/en/policy/working-for-the-few-economic-inequality>).

[WorldCat](#)

Pais, J., K. Crowder, and L. Downey. 2014. “Unequal Trajectories: Racial and Class Differences in Residential Exposure to Industrial Hazard.” *Social Forces* 92(3):1189–1215.

[Google Scholar](#) [WorldCat](#)

Park, Robert. 1915. “The City: Suggestions for Investigation of Human Behavior in the City Environment.” *American Journal of Sociology* 20(5):577–612.

[Google Scholar](#) [WorldCat](#)

Paterson, M. 2001. “Principles of Justice in the Context of Global Climate Change.” Pp. 119–126 in *International Relations and Global Climate Change*, edited by Urs Luterbacher Detlef Sprinz. Cambridge, MA: MIT Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Patillo, Mary. 2013. *Black Picket Fences: Privilege and Peril among the Black Middle Class*. 2nd ed. Chicago: University of Chicago Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

PBL Netherlands Environmental Assessment Agency. 2013. “Trends in Global CO2 Emissions: 2013 Report.” The Hague: PBL/EC-JRC. Retrieved December 17, 2014 (<http://www.pbl.nl/en/publications/trends-in-global-co2-emissions-2013-report>).

[WorldCat](#)

Pellow, David N. 2007. *Resisting Global Toxics: Transnational*

Movements for Environmental Justice. Cambridge, MA: MIT Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Postner, E. A. and D. Weisbach. 2010. *Climate Change Justice*. Princeton, NJ: Princeton University Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Principles of Environmental Justice. 1991. Environmental Justice Resource Center at Clark Atlanta University. Retrieved June 4, 2014 (<http://www.ejnet.org/ej/principles.html>).

[WorldCat](#)

Pulido, Laura. 2000. "Rethinking Environmental Racism: White Privilege and Urban Development in Southern California" *Annals of the Association of American Geographers* 90(1):12–40.

[Google Scholar](#) [WorldCat](#)

Quintero-Somains, Adrianna and Mayra Quirindongo. 2004. *Hidden Danger: Environmental Health Threats in the Latino Community*. Natural Resources Defense Council. Retrieved October 28, 2013 (<http://www.nrdc.org/health/effects/latino/english/contents.asp>).

[WorldCat](#)

Rawls, John. 2001. *Justice as Fairness: A Restatement*. Edited by E. Kelly. Cambridge, MA: Harvard University Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Reid, Colleen E., Marie S. O'Neill, Carina J. Gronlund, Shannon J. Brines, Daniel G. Brown, Ana V. Diez-Roux, and Joel Schwartz. 2009. "Mapping Community Determinants of Heat Vulnerability." *Environmental Health Perspectives* 117(11):1730–1736.

[Google Scholar](#) [WorldCat](#)

Revkin, Andrew. 2008. "Ecuador Constitution Grants Rights to Nature." Dot Earth Blog. September 29. Retrieved October 28, 2013 (<http://dotearth.blogs.nytimes.com/2008/09/29/ecuador-constitution-grants-nature-rights/>).

[WorldCat](#)

Rising Tide North America and Carbon Trade Watch. n.d. *Hoodwinked in the Hothouse: False Solutions to Climate Change*. 2nd ed. Retrieved October 28, 2013 (http://risingtidenorthamerica.org/special/hoodwinkedv2_WEB.pdf).

[WorldCat](#)

Roberts, J. Timmons, David Ciptet, and Mizan Khan. 2015. *The New Global Politics of Climate Change*. Cambridge, MA: MIT Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Roberts, J. Timmons and Bradley Parks. 2007. *A Climate of Injustice: Global Inequality, North-South Politics, and Climate Policy*. Cambridge, MA: MIT Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Roberts, J. Timmons and Melissa M. Toffolon-Weiss. 1999. *Chronicles from the Environmental Justice Frontline*. Cambridge: Cambridge University Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Rudel, Thomas K. 2009. "How Do People Transform Landscapes? A Sociological Perspective on Suburban Sprawl and Tropical Deforestation." *American Journal of Sociology* 115(1):129–154.

[Google Scholar](#) [WorldCat](#)

Saha, R. and P. Mohai. 2005. "Historical Context and Hazardous Waste Facility Siting: Understanding Temporal Patterns in Michigan." *Social Problems* 52:618–648.

[Google Scholar](#) [WorldCat](#)

Salleh, Ariel. 2010. "A Sociological Reflection on the Complexities of Climate Change Research." *International Journal of Water* 5(4):285–297.

[Google Scholar](#) [WorldCat](#)

Sampson, Robert J. 2012. *Great American City: Chicago and the Enduring Neighborhood Effect*. Chicago: University of Chicago Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Schlosberg, David. 2009. *Defining Environmental Justice: Theories, Movements, and Nature*. Oxford: Oxford University Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Schmuck, Hannah. 2002. "Empowering Women in Bangladesh." International Federation of Red Cross and Red Crescent Societies, February 25. Retrieved April 4, 2009 (<http://www.reliefweb.int/rw/rwb.nsf/AllDocsByUNID/570056eb0ae62524c1256b6b00587224>).

[WorldCat](#)

Scott, James. 1999. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven, CT: Yale University Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Sen, Amartya. 1993. "Capability and Well-Being." Pp. 30–53 in *The Quality of Life*, edited by A. Sen and M. Nussbaum. Oxford: Clarendon Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Shue, Henry. 1993. "Subsistence Emissions and Luxury Emissions." *Law & Policy* 15(1):39–60.

[Google Scholar](#) [WorldCat](#)

Sklair, Leslie. 2001. *The Transnational Capitalist Class*. London: Blackwell Publishing.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Smit, B. and J. Wandel. 2006. "Adaptation, Adaptive Capacity and Vulnerability." *Global Environmental Change* 16:282–292.

[Google Scholar](#) [WorldCat](#)

Snipp, C. M. 1986. "American Indians and Natural Resource Development: Indigenous Peoples' Land, Now Sought After, Has Produced New Indian-White Problems." *American Journal of Economics and Sociology* 45(4):457–474.

[Google Scholar](#) [WorldCat](#)

Spring, Ursula. 2006. "Vulnerability and Resilience Building of Gender Confronted with Extreme Hydro-meteorological Events." July 28. Presentation at the Regional Multidisciplinary Research Centre (CRIM), National University of Mexico, Mexico City.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Steinberger, Julia K. and J. Timmons Roberts. 2010. "From Constraint to Sufficiency: The Decoupling of Energy and Carbon from Human Needs." *Ecological Economics* 70(2):425–433.

[Google Scholar](#) [WorldCat](#)

Stephenson, Wen. 2014. "Ground Zero in the Fight for Climate Justice." *The Nation* 23/30 June:17–25.

[Google Scholar](#) [WorldCat](#)

Tierney, Kathleen J. 1999. "Toward a Critical Sociology of Risk."

Sociological Forum 14(2):215–242.

[Google Scholar](#) [WorldCat](#)

Tierney, Kathleen J. 2007. “From the Margins to the Mainstream? Disaster Research at the Crossroads.” *Annual Review of Sociology* 33:503–525.

[Google Scholar](#) [WorldCat](#)

United Nations Environment Programme (UNEP). 2010. *The Emissions Gap Report: Are the Copenhagen Accord Pledges Sufficient to Limit Global Warming to 2° C or 1.5° C?* Retrieved October 28, 2013 (<http://www.unep.org/publications/ebooks/emissionsgapreport/>).

[WorldCat](#)

United Nations Framework Convention on Climate Change (UNFCCC). 1992. United Nations, New York. Retrieved October 28, 2013 (<http://unfccc.int/resource/docs/convkp/conveng.pdf>).

[WorldCat](#)

United Nations Framework Convention on Climate Change (UNFCCC). 2014. *Report of the Ad Hoc Working Group on the Durban Platform for Enhanced Action*. Conference of the Parties, Twentieth Session. Lima, Peru. Retrieved December 16, 2014 (<http://unfccc.int/resource/docs/2014/cop20/eng/l14.pdf>).

[WorldCat](#)

United Nations WomenWatch. 2009. “Women, Gender Equality and Climate Change.” Retrieved June 25, 2011 (http://www.un.org/womenwatch/feature/climate_change/downloads/Women_and_Climate_Change_Factsheet.pdf).

[WorldCat](#)

U.S. Environmental Protection Agency (EPA). n.d. *Green Book*. Data compiled by MSB EnergyAssociates (<http://www.epa.gov/oar/oaqps/gbook/>).

[WorldCat](#)

U.S. Environmental Protection Agency (EPA). 2014. “Greenhouse Gas Emissions Data.” Retrieved June 26, 2014 (<http://www.epa.gov/climatechange/ghgemissions/global.html>).

[WorldCat](#)

Vanderheiden, Steve. 2013. “What Justice Theory and Climate-Change Politics Can Learn from Each Other.” *PS: Political Science &*

Politics 46(1):18–22.

[Google Scholar](#) [WorldCat](#)

Veblen, Thorstein. [1899] 2007. *The Theory of the Leisure Class*. New York: Oxford University Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Weber, Max. [1922] 1978. *Economy and Society: An Outline of Interpretive Sociology*. Berkeley: University of California Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Whitman, S., G. Good, E. Donoghue, N. Benbow, W. Shou, and S. Mou . 1997. “Mortality in Chicago Attributed to the July 1995 Heat Wave.” *American Journal of Public Health* 87(9):1515–1518.

[Google Scholar](#) [WorldCat](#)

Widener, Patricia. 2011. *Oil Injustice: Resisting and Conceding a Pipeline in Ecuador*. Lanham, MD: Rowman & Littlefield.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Wilson, William J. 2012. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy*. 2nd ed. Chicago: University of Chicago Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Winkler, H., T. Jayaraman, J. Pan, A. S. de Oliveira, Y. Zhang, G. Sant, J. D. G. Miguez, T. Letete, A. Marquard, and S. Raubenheimer. 2011. *Equitable Access to Sustainable Development: Contribution to the Body of Scientific Knowledge*, Beijing, Brasília, Cape Town, and Mumbai: BASIC Experts Group.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Wisner, B., P. Blaikie, T. Cannon, and I. Davis. 2004. *At Risk: Natural Hazards, People’s Vulnerability, and Disaster*. 2nd ed. London: Routledge.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

World Bank. 2006. *Where is the Wealth of Nations?* Washington, DC: Author.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

York, Richard, Eugene A. Rosa, and Thomas Dietz. 2003. “A Rift in Modernity? Assessing the Anthropogenic Sources of Global Climate

Change with the STIRPAT Model.” *International Journal of Sociology and Social Policy* 23(10):31–51.

[Google Scholar](#) [WorldCat](#)

Young, Iris M. 1990. *Justice and the Politics of Difference*. Princeton, NJ: Princeton University Press.

[Google Scholar](#) [Google Preview](#) [WorldCat](#) [COPAC](#)

Zahran, S., D. W. Hastings, and S. D. Brody. 2008. “Rationality, Inequity, and Civic Vitality: The Distribution of Treatment, Storage, and Disposal Facilities in the Southeast.” *Society and Natural Resources* 21:179–196.

[Google Scholar](#) [WorldCat](#)

Zahran, S., L. Peek, J. G. Snodgrass, S. Weiler, and L. Hempel. 2011. “Economics of Disaster and Risk, Social Vulnerability, and Mental Health Resilience.” *Risk Analysis* 31(7):1107–1119.

[Google Scholar](#) [WorldCat](#)