



Environmental Justice at the Crossroads

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Abstract

The field of environmental justice emerged at a crossroads of social movements, public policy, and academic research – what we call environmental justice praxis. Now, the field finds itself again at a crossroads as it expands to address new populations, problems, and places. In this article, we first outline the competing definitions of the problems of environmental inequality and environmental racism from the perspective of social movements, policy, and research. Second, we identify the expansion of the field in two key areas: new issues and constituencies and new places and sites of analysis – specifically the relationship between the local and the global. This expansion leads to increasingly sophisticated spatial methodologies and social theories to examine problems of environmental injustice. Finally, we identify three promising trends in the field: refining the mechanisms and processes of environmental injustice, a renewed focus on the state and the environment as key actors, and a revitalized focus on the interactive and continually evolving relationship between scholarship and social movements.

Introduction

2007 witnessed the 20-year anniversary of the United Church of Christ report ‘Toxic Wastes and Race’. That influential 1987 report suggested that race (independent of class) was the most significant among the variables tested in association with the location of commercial hazardous waste facilities (Chavis and Lee 1987). Written to respond to and support a growing social movement developed to resist the siting of toxic waste dumps in predominantly African-American communities in the Deep South, this report initiated two decades of vigorous debate and research in the field of ‘environmental justice’.

This article provides a critical introduction to the ‘state of the field’ of contemporary environmental justice research, which has undergone spectacular growth and diffusion in the last two decades. From its earliest roots in sociology, the field is now firmly entrenched in several different academic disciplines and has also ‘gone global’. This article provides a snapshot of environmental justice scholarship today and its relationship to social movements and policy, its promising new directions, and the theoretical and political implications of the field’s growth and diffusion.

Overviews of the field of environmental justice research such as Williams (1999), Bowen (2001), and Brulle and Pellow (2006) offer useful guides to the expansion and diffusion of literature. A brief scan of titles from MIT's influential Urban and Industrial Environments series with the term 'environmental justice' in the title or sub-title published in the last 3 years alone shows the vibrancy and diversity in the field: *Environmental Justice in Latin America* (Carruthers 2008), *Resisting Global Toxics* (Pellow 2007); *Environmental Justice and Environmentalism* (Sandler and Pezzullo 2007); *Growing Smarter* (Bullard 2007); *Noxious New York* (Sze 2007); *Power, Justice, and the Environment* (Pellow and Brulle 2005); *Street Science* (Corburn 2005) and *Diamond* (Lerner 2005).

As a field that draws from and integrates theory and practice in a mutually informing dialogue, environmental justice can be understood as a form of social *praxis* (Prilleltensky 2001). We therefore view environmental justice to be a field positioned on a 'crossroads': rising through the convergence of social movements, public policy, and scholarship. If crossroads are a convenient meeting point, thus also can they indicate crossed signals, sites of liberation and possibility, seduction, and danger. In George Lipsitz's study of global music and culture, titled *Dangerous Crossroads* (1994), he argues that new circuits of economic investment and technological communication are erasing old common-sense notions of place and local identity. This trend is destabilizing: forging new connections, dependencies, and vital intercultural communications as people, ideas, capital, and cultures criss-cross in the new world order. So too is environmental justice a crossroads phenomenon, embodying both the possibilities and the perils of this dynamic location. We argue that instead of imposing a restrictive boundary around the concepts of environmental justice, scholarship in this emerging field should embrace its wide-ranging and integrative character, while remaining grounded in its political and theoretical projects to address the sources and impacts of social power disparities associated with the environment.

Defining environmental justice: movements, policies and research

The field of environmental justice has struggled over the question of definitions. 'Environmental racism', the term used in the earliest literature in the field (e.g., Chavis 1987), describes the disproportionate effects of environmental pollution on racial minorities. Because it describes the disproportionate relationship between high levels of pollution exposure for people of color and the low level of environmental benefits they enjoy, environmental racism can be defined as the unequal distribution of environmental benefits and pollution burdens based on race. 'Environmental inequality' has emerged more recently to encompass both additional factors that associated with disproportionate environmental impacts such

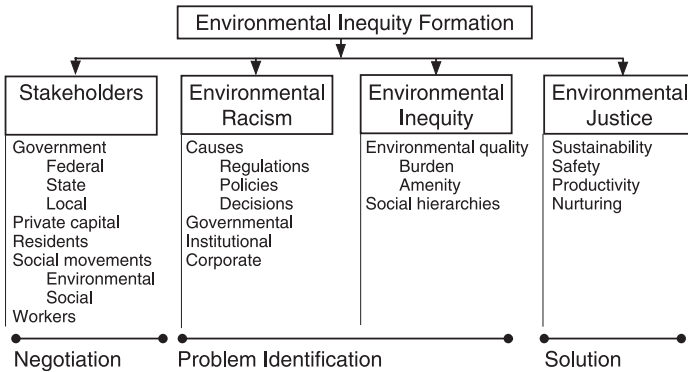


Figure 1. A diagrammatic framework for a theory of environmental justice based on Pellow (2000).

as class, gender, immigration status, as well as the inter-connections between these factors. 'Environmental justice' is the name of the social movement that emerged in response to these particular problems. Pellow (2000) has defined an Environmental Inequality Framework illustrated below.

Pellow's Environmental Inequality Framework (see Fig. 1) has three important elements. First, environmental injustice is not just a single harmful event/action/result, but rather a complicated history of political, social, and economic interactions leading up to, and continuing beyond, the contested instance of perceived injustice. Second, environmental injustice result from decisions made by all parties which may seem contradictory or change over time with shifting circumstances (in opposition to the simple Them vs. Us or Perpetrator-Victim frame). Third, a life cycle perspective must be taken on hazard production and consumption in order to fully account for the distribution of costs and benefits in time and space related to hazards. Although Pellow is careful to use environmental racism *and* environmental inequality, most sociological researchers chose to use environmental inequality as their preferred analytic term over environmental racism. This term allows for greater inclusiveness of affected populations and does not require the stringent and hard to acquire evidence of intentional targeting of racial minorities for environmental harms, although others argue that decentering race and racism has political implications (Pulido 1996).

The politics of environmental justice: social movements and public policy

The first generation of environmental justice research was focused on particular social problems and in social movement contexts, and the research was done with an explicit focus on critiquing and changing public policy. In fact, the early environmental justice literature was inspired and

documented by a number of protest actions in the Deep South, with strong connections to the civil rights movement. In 1982, in Warren County, NC, a primarily low-income Black community protested a controversial toxic waste dump and symbolically initiated the national environmental justice movement (McGurty 2007). Building on this and other local struggles, the US-based environmental justice movement emerged in the 1980s as a result of the confluence of events and reports that brought the terms 'environmental racism' and 'environmental justice' into the public sphere and into policy discourses. Subsequent environmental justice activism targeted the 'unequal protection' from environmental pollution by local, state, and national regulatory agencies. For example, early research from the *National Law Journal* suggested that there may be lower penalties for environmental violations in minority communities and slower clean-up times (discussed in Lavelle and Coyle 1993).

The environmental justice movement developed in an explicit reaction to the lack of adequate attention to race and class issues by mainstream environmental movement. A key event in the environmental justice movement is the letter written by Richard Moore in 1990 of the Southwest Organizing Project and co-signed by 100 community-based activists to the heads of eight prominent national environmental organizations. This letter highlighted the lack of diversity of staff and of programs in the mainstream environmental movement and well as its reliance on corporate funding (Tokar 1997; for a reappraisal of that conflict, see Sandler and Pezzullo 2007). The Principles of Environmental Justice, adopted at the 1991 First People of Color Environmental Leadership summit and widely circulated (UCC 1991), can be considered the founding vision document that catalyzed the environmental justice movement. The principles provided an alternative framework for environmentalism by moving beyond the class and racial biases in mainstream environmental groups, and combating the abuses not only of corporate polluters, but also the complicity of regulatory agencies. The principles also embraced a far-reaching spatial and temporal scale, addressing histories of colonialism, imperialism, and genocide of indigenous cultures. Excellent histories of the environmental justice movement have been published in recent years such as Cole and Foster (2001), Taylor (2002); Camacho (1998); and Bullard (1993), while more recently, Pellow and Brulle (2005) have provided a salutary critical appraisal of the movement's strengths and weaknesses.

In response to pressure from social movements – and informed by research – government agencies have also incorporated environmental justice as a basis for public policy in the federal, state, regional, and even local levels. The policy that initiated such public sector efforts was President Clinton's Executive Order of 1994 (#12898) which directed all federal agencies to 'make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities

on minority populations and low-income populations' (Clinton 1994). This and subsequent policies tend to focus on a distributive notion of justice (i.e., the distribution of environmental harms, benefits, and resources across different populations and sites.) In contrast, the environmental justice movement has also emphasized a procedural sense of justice, claiming representational space in the political arena and the right to 'speak for ourselves' (Cole and Foster 2001). Some scholars such as Schlosberg (2004) have observed that 'recognition' of diverse cultural identities in a critical pluralism is a pre-condition for entry into the distributional system and ought to be considered a third definition of justice in environmental justice. The multiple notions of justice within the theories and practices of environmental justice have complicated but also enriched the field.

Defining the methods – early debates in environmental justice research

Developing in relationship to the environmental justice movement, there is now a large and fast-growing literature on the phenomena of environmental racism, environmental inequality, and the environmental justice movement itself. Its disciplinary locations are primarily located within sociology, natural resource policy, and environmental law, although environmental justice writings also appear within the various social sciences and humanities disciplines, including human geography, history, literature, philosophy and environmental ethics, political theory, and radical political economy.

Social movement scholars have identified the key features of what can be termed an 'environmental justice paradigm' (Taylor 2000). The diverse issues, constituencies, and geographies found under the umbrella 'environmental justice' are linked through a worldview or 'environmental justice paradigm' that emphasizes an injustice frame to understanding the relationship between people and the environment (Taylor 2000). Pulido and Peña (1998) argue that the distinction between mainstream and environmental justice issues is based not only in issue identification, but also on 'positionality', or a person's location within the larger social formation shaped by factors such as race, class, gender, and sexuality. Egan's (2002) treatment of 'subaltern environmentalism' also allows for a useful interrogation of the relationships among race, class, and the environmental movement.

Social movement research explores the wide range of aspects of the environment through which low income and communities of color tend to be affected disproportionately and where there is active social movement organizing that frames these problems as environmental racism or environmental injustice. These issues include: toxic/chemical pollution such as oil refineries and petrochemical facilities in Cancer Alley in the deep south and in California, (Allen 2003; Lerner 2005); military pollution and toxic dumping on Native lands (Hooks and Smith 2004; Ishiyama 2003; Kuletz

2001; LaDuke 2004), environmental health among farm workers, (Pulido 1996); health effects of poor housing, such as lead poisoning; and consumption of contaminated fish by poor and immigrant communities (Pflugh et al. 1995). Environmental justice also expands the concept of environment to include public and human health concerns, in addition to natural resources such as air, land and water (Di Chiro 1998).

Pioneering scholars like Robert Bullard, Bunyan Bryant, and Paul Mohai set out the key terms and questions in the field of environmental racism research through a series of seminal works: *Dumping in Dixie* (Bullard 1990); *Environmental Racism: Voices from the Grassroots* (Bullard 1993) and *Race and the Incidence of Environmental Hazards: A Time for Discourse* (Bryant and Mohai 1992). The academic debate that dominated the early quantitative sociological research on environmental racism after these key texts revolved around the question of whether race or class is the primary factor in disparities of environmental exposure. In large part, these questions were of measurement, quantification and causality: was there empirical evidence supporting claims of disproportionate exposure? What was the relationship between race and class and which is the primary independent variable? Brulle and Pellow (2006) offer a meta-review of the literature on this question, looking at reviews conducted by Brown (1995), Szasz and Meuser (1997), and the Institute of Medicine (1999), which verified that race and class were significant determinants to known and prospective environmental hazards and the timing and review of remediation actions. One aspect of the race vs. class debate pivots around whether a particular population preceded or followed a neighborhood's locally undesirable land uses (LULU), or simply put, which came first: the people or the pollution. For example, one school of thought argues that disadvantaged groups migrate to where land values are cheap and where zoning allows for industrial use – thus representing a 'normal' function of the market (Been and Gupta 1997). A countervailing view argues that the LULUs are sited where populations are low income or comprised of racial minorities (Pastor et al. 2001). This correlation is not, however, causation, leaving the important question of intent unanswered. In other words, early debates in the environmental justice research focused on: was it 'real'? and what was the 'it'?

Expanding the field of environmental justice

From the terrain of 'defining' environmental justice and arguing for its empirical reality, we now turn to the rapid expansion of the field in two key areas: new populations and problems, and new places and sites of analysis – specifically the relationship between the local and the global. In adding issues and sites, the research is using increasingly sophisticated spatial methodologies and theoretical frameworks to define and examine problems of environmental injustice.

New populations, new problems

In its earliest incarnations, environmental justice research was concerned primarily with the toxic and hazardous waste impacts in low income and communities of color. It has since expanded the kinds of environmental inequalities being studied in areas such as transportation, health, housing, and smart growth/land use, water, energy development, brownfields, and militarization. Recent research also has both broadened the scope to include other racial and ethnic groups (e.g., Latinos, Asians, and Native Americans) and disparities associated with gender and age. These include studies of occupational exposures in the garment industry and in Silicon Valley factories staffed by Asian and Latino immigrant women workers, (Pellow and Park 2003) as well as Native American communities imperiled by military wastes and hazards (Hooks and Smith 2004). Allen (2003), Peeples and DeLuca (2006), and Di Chiro (1998) offer critical and innovative analyses of gender and the role of women as protagonists in environmental justice activism. Youth environmental justice activism has also sparked a number of works that examine the issue of age/generation in environmental justice (Sze et al. 2005). Similarly, London (2007), Driskell (2002), and Chawla et al. (2005) describe the role of youth-led participatory action research in promoting youth voice and perspectives in the improvement and redesign of urban neighborhoods.

Judging by quantity alone, environmental justice analyses of transportation issues is a dominant feature of the recent literature. On the issue of access, critiques of transportation planning have observed that low-income and communities of color often suffer from transit options that are limited, inconvenient, low quality, and high cost (Bullard and Johnson 1997; Cohen and Hobson 2004), leaving residents with limited mobility and therefore means to access employment, services, education, recreation, and other local and regional opportunities. Robert Bullard (2004) describes the chronic inequality in access to transportation by people of color as 'transportation racism' and shows how government policies and urban and regional planning regimes limit physical, social, and economic mobility. Transportation impacts have not only focused primarily on the health effects of air pollution from vehicles (Liu 1996; Morello-Frosch et al. 2005; Prakash 2007; Sanchez and Wolf 2007; Schweitzer and Valenzuela 2004), but also address issues of pollution to neighborhood due to noise (Sobotta et al. 2007) and toxic spills (Schweitzer 2006).

Environmental health scientists are beginning to document the health effects of disproportionate urban pollution exposures and their impacts on the education and life chances of disempowered populations. Morello-Frosch et al.'s (2002) notable study of ambient air toxics exposure and health risks among school children in Los Angeles found that African-American and Latino youth bear the largest share of the burden of air pollution risks, and that these respiratory hazards associated with air toxics seem to

negatively affect indices of academic performance. Similarly, Corburn (2005) examines how low-income and minority urban populations engage in street science on diverse health issues: lead poisoning, fish contamination, and asthma. This democratic science or 'popular epidemiology' is particularly evident in studies on urban asthma and air pollution (Brown et al. 2005; Sze 2007). In particular, two important principles undergird environmental justice activism on environmental health and knowledge: *cumulative impact* and the *precautionary principle*. Cumulative impact analysis looks at risks in combination within the complex context of people's lived realities, thereby rejecting the dominant risk assessment methodologies that look at factors in isolation, in laboratory conditions, and truncated from social factors. Environmental justice approaches to particular health problems like asthma also draw heavily from the 'Precautionary Principle', which is being advanced by public health and cancer activists (Myers and Raffensperger 2006; Sze 2007; Whiteside 2006). This notion, also known as the 'principle of precautionary action', calls for preventing harm to the environment and to human health by shifting the 'burden of proof' from the regulator (and residents) to the polluter to demonstrate the safety of a new product or process. Environmental justice activists are a major health activist constituency that supports the precautionary principle (Morello-Frosch et al. 2002).

Like transportation and environmental health, environmental justice studies of housing and land use reflect a complex analysis from multiple dimensions, including the questions of housing location (e.g., proximity to toxic facilities and areas of poor environmental conditions) as well as the safety and health impacts of housing itself. The issues of zoning and urban planning have been infused into environmental justice research within the framework of 'smart growth' – an effort to prevent urban and suburban sprawl. Adding in considerations of the disproportionate impacts of sprawl on low income and communities of color and or the distribution of the benefits of growth within and between regions has produced the notion of 'regional equity'. Regional equity, in turn, provides a framework that can bridge environmental justice and urban and regional planning, as has been shown by several notable recent scholarly works (Bullard 2007) that integrate analyses of race and sprawl (Pastor 2007; Powell 2007), food justice (Morland and Wing 2007; Williams 2005), and transportation equity (Chen 2007; Prakash 2007; and Sanchez and Wolf 2007). Smart growth also encompasses issues such as the equity dimensions of brownfield redevelopment (Perkins 2007) and disposal of garbage and other wastes (Pellow 2002; Sze 2007). Critics of the prison-industrial complex have also made common cause with the environmental justice movement noting the interlinked environmental, social, political, and economic costs of prison construction in sites such as California's Central Valley (Braz and C. Gilmore 2006; R. Gilmore 2007).

Energy has become a new front-line in environmental justice research and activism through analysis of how energy production and its environmental and social externalities are 'racialized' in a context of growing globalization and neo-liberal retrenchment of the state (e.g., Sze 2005b). This research has focused on contexts such as the storage and contamination of wastes from nuclear power production, often on Native American lands (Fan 2006; Kuletz 2001; LaDuke 2004; Sachs 1996), concentration of energy and petrochemical plants in areas of high low income and communities of color (Lerner 2005), and the impact of energy deregulation on these same communities (Sze 2007). In examining energy production and popular environmental justice energy activism along the USA–Mexico border in response to the deregulation and subsequent crisis of the California energy markets Carruthers (2007) expands the environmental justice framework both in terms of issues and geography. Environmental justice analyses of militarism often encompass energy issues (in the case of nuclear fuels), although not exclusively (Ishiyama 2003). For example, Santana (2005) examines the clean up of Vieques in the context of Puerto Rican struggles to expel the US Navy from the island.

New spatial methodologies

The field of environmental justice research is also adding methodological refinements to address earlier deficiencies. Downey (1998, 2003, 2005a,b) argues that while there may be some spatial variability in environmental inequality, much of the debate over the kinds and extent of environmental inequality is due to an inconsistency in definitions and methods and the failure to consider the multiple forms that this phenomenon can take.

Most problematic in the spatial analyses of one strand of research is that the 'unit-hazard' approach uses unrealistic assumptions to compare the demographic profile of pre-determined geographic units of analysis (such as zip codes or census tracts) that contain a given hazard with those units that do not. Mohai and Saha (2007) suggest a set of 'distance-based' methods that can cut across pre-existing geographic units to create more accurate relationship between hazard and potentially exposed population. However, while representing a great improvement over the hazard-unit approach, the distance-based approaches still rely on pre-determined spatial units (albeit constructed for the study itself) and still lack a nuanced hazard-exposure model with its reliance on abstracting neighborhoods into concentric circles and assuming a linear relationship between proximity and exposure (Beve et al. 2007, 51). A 'plume-based method' (Chakraborty and Armstrong 1997) can address these shortcoming by estimating an exposure pathway based on the characteristics of the hazard and the site itself (e.g., geo-morphology, meteorology). To connect the models of exposure to actual human health impacts, Beve et al. (2007, 52) add a model of 'physical health and psychological well-being, which includes

biophysical variables in the analysis'. Through this socio-spatial analysis, Beve et al. are able to show definitive relationships between individual residential location and location of the hazard that do not depend on proximity at all.

Other researchers (Pastor et al. 2002) have integrated air quality hazard exposure models that likewise avoid simplistic assumptions about proximity and instead allow for site-specific analyses of exposure pathways and therefore more effective policy and social movement responses. Schweitzer (2006) uses GIS cluster analysis of industrial producers of hazardous waste as well as route analysis of waste transportation to argue that Latinos in Los Angeles are affected disproportionately by hazardous waste spills. While she uses the pre-determined census-track units that characterize the unit-hazard approach and does not provide an explicit exposure model, her ability to link the spatial logics of industrial agglomeration and transportation routes to environmental inequalities is notable.

Methodological refinements for spatial analysis also include Downey's differentiation (2006) between the 'disparate social impacts inequality' and 'relative distribution inequality' experienced by black and Hispanic populations in 14 major metropolitan regions in the USA. He finds that while environmental inequality is experienced by both populations to a significant degree, that in these settings, Hispanic environmental inequality (in proximity to Toxic Release Inventory sites) was more widespread than black environmental inequality. Likewise, Brown (1995), Pastor et al. (2002), and Sadd et al. (1999) find a complex pattern of racially oriented environmental inequalities.

Schweitzer and Stephenson (2007) apply a skeptical eye to definitive statements that race (independent of class) can be statistically shown to explain proximity to pollution sources on land markets. Instead they suggest (2007, 324) that researchers rigorously apply work on the spatial, market, and socio-political logics of residential segregation and housing discrimination to provide a more nuanced analysis of the relationship between housing and environmental injustices. In particular, approaches that can pull apart factors of housing discrimination per se, from related but distinct issues of exclusionary zoning and siting practices (Pendall 2000; Sze 2007) and the historical movements of racial and ethnic populations (Krieg 2005).

Rethinking environmental justice theory

Methodological refinements in the field parallel the increasing sophistication of environmental justice theory, particularly from the disciplinary perspectives of radical geography, political philosophy, and history. Laura Pulido (2000) critiqued the then-dominant strands of quantitative environmental justice research for being insufficiently theoretical about race and how racism actually operates and thereby opened up an important re-examination

of the field. She argues that environmental justice and racism research has been 'estranged from social science discussions of race' and is divorced from concerns of geography, in particular, how racism produces conditions a set of spatial relationships. These theoretical deficiencies are built upon narrow views of racism, which limits social justice claims and ultimately reproduce a racist social order.

Morello-Frosch's critique (2002) focuses on the political economy of place. By integrating relevant social and legal theories with a spatialized economic critique, she formulates a more supple theory of environmental discrimination that focuses on historical patterns of industrial development and racialized labor markets; suburbanization and segregation; and economic restructuring. Hooks and Smith (2004) argue that the settlement proximity of Native Americans to hazardous sites (principally military bases) is not due to market factors or housing segregation as part of the capitalist 'treadmill of production' (see Schnaiberg and Gould 1994). Instead, they call this parallel system 'the treadmill of destruction' run according to a logic of forced resettlements and military expansionism and posit it as a complementary framework to understand the spatial distribution of hazards and of environmental inequalities.

A focus on historical research shows that the answers to why environmental inequalities exist depend on the particulars— the place, population, political contexts, and time period. The sub-fields of environmental history in general and in particular 'new western history' that tells the often neglected stories of how the exploitation of natural resources is typically mirrored in the exploitation of human communities (Limerick 1987; White 1991; Worster 1992). More recent volumes focus on particular aspects of historical patterns and their social meanings on African Americans (Glave and Stoll 2005), on global issues (Washington et al. 2006), as well as on particular sites (Washington 2005) and by scholars of contemporary movements attempting to historicize the current problems (Pellow 2002; Pellow and Park 2003). Boone and Modarres (1999) and Krieg (2005) use historical investigation in Baltimore to reveal that patterns of discriminatory housing and housing segregation result in greater proximity of working class whites – not blacks – to hazardous industrial sites.

New places – globalizing environmental justice

While environmental justice as a social movement and as a scholarly field arose primarily in the USA, recent literature has begun to expand its scope to include other national contexts and the realm of the global. To some extent, this can be understood as the academic literature catching up to the global realities of the movement. Notable examples include Watson and Bulkely's analysis of the politics of environmental justice in UK municipal waste management (2005), Mvondo (2006) on access of minorities decentralized forest resources in Cameroon, and Ikporukpo's

(2004) examination of fiscal federalism and the distribution of oil revenues in Nigeria. Three notable books on non-US contexts are *Environmental Justice in South Africa* (McDonald 2002) and Carruthers (2008) *Environmental Justice in Latin America*, as well as *Just Sustainabilities: Development in an Unequal World* (Agyeman et al. 2003). Agyeman's 'transatlantic tales' (2002) compares the US and UK environmental justice movement and explores the significance of Britain's lack of civil rights movement comparable to the one in the USA that gave rise to that country's environmental justice movement. Desbiens (2007) charts the struggle of the Eyeouch (East James Bay Cree) people against the province of Quebec's construction of the LeGrand River hydroelectric complex and the conflicts over scale that these struggles entailed. Several notable works have also reworked the theoretical bases of environmental justice by linking it to debates over neoliberalism and globalization (Faber and McCarthy 2003; Sze 2007) as well as the discourses of sustainable development (Agyeman 2005; Dobson 2003) and border issues (Fletcher 2004).

Such analyses of the politics of natural resources connect this edge of environmental justice with the field of political ecology, an approach to understanding the dynamics of power associated with the access, management, and control of natural resources (Robbins 2004). Taking this to a transnational scale, Pellow (2007) offers an insightful analysis of global flows of toxics and the global movements that have developed to oppose these toxic flows. Pellow's study of the global transnational toxics trade and the activism set against it creates a critical dialogue between the literatures of social movements, globalization studies, international political economy, risk, and modernization. This important book thereby helps the field of environmental justice work through many of its theoretical shortcomings and in turn enriches each of these related fields of knowledge.

Global climate change is a key issue in which environmental justice frameworks are particularly useful because the roots of the problem are found in the differential power and global inequalities in relationship with the environment. In the USA, groups like the Environmental Justice and Climate Change Coalition forecasted the disproportionate impacts of a catastrophic hurricane in New Orleans years before Hurricane Katrina (Pastor et al. 2006; Sze 2005a). Prominent environmental justice scholars such as Robert Bullard, director of the Environmental Justice Resource Center at Clark Atlanta University and Beverly Wright, have been leading a research project on official responses to environmental disasters and the impact of race on disaster planning (Bullard forthcoming). Globally, the United Nations Development Program report, 'Fighting climate change: Human solidarity in a divided world' documents, 'increased exposure to droughts, floods and storms is already destroying opportunity and reinforcing inequality' (Watkins 2007). The report documents that rich countries like the USA and in Western Europe contribute many times the greenhouse gases per capita as poor countries but will face much less of

the fallout and have much greater resources to respond to any impact. In contrast, it is the poorest countries and most vulnerable citizens who will suffer the earliest and most damaging setbacks from impacts of climate change – from increased exposure to droughts, floods, storms, and sea-level rise. In response, global coalitions calling for ‘Climate Justice’ developed the Bali Principle of Climate Justice modeled on the Principles of Environmental Justice (2002). Such coalitions have also become increasingly vocal and visible at global forums on climate change (including the United Nations Climate Change Conference in Bali in late 2007 and 2008 summit of indigenous peoples from throughout Latin America where participants called for the rich countries to pay for community-based forest protection efforts in the global South).

Working at a more abstract level of the global, authors such as Schlosberg (2004) and Newell (2005) seek to revise environmental justice within a context of global environmental politics. By arguing that ‘recognition’ of diverse cultural identities in a critical pluralism is a pre-condition for entry into the distributional system, Schlosberg allows environmental justice to encompass struggles for indigenous and popular movement rights, knowledge, and identity around the world. Schlosberg synthesizes his global view of environmental justice by asserting, ‘It is not simply that the justice of environmental justice in political practice includes equity, recognition and participation: the broader argument here is that the movement represents an integration of these various claims into a broad call for justice’ (2004, 527). Likewise, Schlosberg (2004, 524) holds that both anti-globalization and people-centered development advocacy directed at multi-lateral institutions such as the World Trade Organization and the World Bank can also be seen as mobilizations against an encroaching ‘global monoculture’. In a similar way, Newell (2005, 89–90) argues that a global understanding of environmental justice must focus on ‘a broader set of questions than the role of institutions in global society and the interactions of state and non-state actors in global stage’. Instead, Newell observes that when we ‘focus on intra and transnational social and economic divisions, looking for example, at “Souths in the North and Norths in the South”, we have an entry point for assessing the importance of race and class to inequality in global environmental politics’ (2005, 70).

New directions

Environmental justice is a field always at the crossroads. Continuing its outward trajectory and its integrative tendencies, the frontiers of environmental justice research can be seen as expanding into three new areas: (i) refining the mechanisms and processes of environmental injustice; (ii) a renewed focus on the state and the environment as key actors; and (iii) a revitalized focus on environmental justice praxis and the interactive and continually evolving relationship between scholarship and social movements.

Refining mechanisms

While environmental justice research has been consumed by the debates over how to reliably establish an empirical basis for the existence of environmental inequality (the what and how of environmental justice), the scholarship has been much thinner on the question of *why* these relationships among race, class, and other structuring identities exist. What are the mechanisms and causal factors of environmental inequality? Although many works make assertions on causation, nearly all the quantitative research is limited primarily to showing correlation (e.g., Pastor et al. 2006), and even the qualitative research becomes more speculative and less definitive the closer it approaches the question of specific mechanisms. Research that weaves together multi-leveled, multi-scalar, and multi-method analyses of historical, spatial, political, economic, and ecological factors reach closest to the elusive goal of understanding how environmental inequalities and why they tend to persist. While it is arguable whether any element of the environmental justice literature has achieved this ideal goal, several works, such as Powell (2007) linking sprawl, race, and environmental inequalities, Freudenburg's (2005) notions of 'privileged access and accounts', and the now classic work by Pulido (1996) on the political economic processes of race and class in shaping environmental outcomes, provide useful models. However, to date, such research remains complicated to design and implement and is therefore both rare and of great value for future efforts.

Bringing the state back in

As part of its attempt to specify the mechanisms of environmental inequality, environmental justice research has begun to heed Theda Skocpol's (1985) influential call towards 'bringing the state back in'. Such approaches view the state as more than the 'government' but instead as a multi-faceted system that participates actively (if not autonomously) in structuring relationships in society, including those that result in the distribution of environmental risks and opportunities. Beamish's (2002) analysis of the operations of the state in producing and enabling 'silent spills' of toxic substances, Hooks and Smith's (2004) above-cited state-centric analysis of the 'treadmill of destruction', and Pellow's (2007) framework for understanding the trans-national interactions of states and multi-national corporations in global toxic trade all provide important tools for this project. Tilly and Tarrow's (2006) insightful notion of 'contentious politics' that brings together state, science, and social movements – while not explicitly focused on environmental justice – is particularly suited for a nuanced understanding of the roles of the state in formation and struggles around environmental inequalities (see also London et al. 2008 on the implementation of environmental justice policy in California).

Bringing the environment back in

In recent literature, environmental justice and ecological science can be seen as reaching towards each other to bring the environment back in to environmental justice scholarship. While this encounter is not yet fully formed, it does represent a promising new direction for both fields. From the side of ecology, this approach to environmental justice is part of a much broader attempt to better integrate and theorize humans as agents of environmental change (Alberti et al. 2003; Hooke 2000) and to integrate humans and social phenomena into analysis of environmental conditions and outcomes (Zimmerer and Bassett 2003). In particular, the application of ecological analysis of biophysical disturbance offers important insights into understanding the spatial distribution and temporal patterns of environmental burdens (Pickett et al. forthcoming). From the side of environmental justice, a number of works have attempted to 'bring the environment back in' to environmental justice through recognizing the role of non-human actors in social phenomena (Schlosberg 2007), the de-naturalization of 'natural' disasters to expose the political, economic, and cultural factors that precipitated or exacerbated meteorological events (e.g., Pastor et al. 2006 on environment, disaster and race in the wake of Hurricane Katrina), the broadening of environmental justice to include exclusion from environmental amenities (Boone 2002), and the explorations of the environmental justice implications of environmental phenomena such as global climate change (Adger et al. 2001; Watkins 2007).

As environmental justice continues to bring the environment back in, it is fruitful to consider parallel efforts within political ecology as that field asks itself: 'where is the ecology in political ecology?' (Walker 2005). More broadly, political ecology echoes environmental justice's attempt to develop theoretical frameworks to explore how injustices are produced within the mutually constitutive realms of society and nature (Zimmerer and Bassett 2003). Hillman's (2006) approach to 'ecological justice' that accounts for the ways in which ecological conditions and socio-political and economic forces mutually reshape each other provides a powerful example of how to integrate ecological science and environmental justice literatures. While seeking to differentiate their 'Marxist urban political ecology', Swyngedouw and Heynen (2003, 914) propose a framework quite reminiscent of environmental justice that can provide 'an integrated and relational approach that helps untangle the interconnected economic, political, social and ecological processes that together go to form highly uneven and deeply unjust urban landscapes.'

Praxis

Understanding environmental justice as a form of praxis brings into focus both its many promises and its perils. environmental justice offers an

exciting opportunity for those interested in developing models of public scholarship (Boyte 2002; Cohen and Yapa 2003) and academic–activist partnerships through a technique of ‘data judo’ (Morello-Frosch et al. 2005), participatory action research (Corburn 2005), and critical and radical pedagogy (Jarosz 2004). Such possibilities arise through the ‘decolonization’ of research (Smith 1999), the blurring of the boundaries between research subject and object, and the embrace of political projects and values-driven scholarship, despite the risks of losing one’s presumed ‘objective’ mantle. Such an engaged stance also allows for a great emphasis on solutions-oriented and policy-relevant research. At the same time, a praxis model of research leaves the researcher open to critiques of being more of an activist than an academic or being insufficiently theoretically grounded (see, e.g., Swyngedouw and Heynen 2003). From the other side, identifying oneself as a resource and ally for social movements opens one up to multiple and often conflicting demands from these movements that may pull against notions of independent scholarship (see, e.g., Friedland 2003). Even if one can successfully integrate political and theoretical projects, great challenges remain in developing and negotiating trusting and productive relationships that can bridge the theoretical and activist worlds and words of environmental justice. And yet, it is exactly this project of bridging worlds, in a time of increasing separation of thought and action that makes the field of environmental justice so vital and important.

Conclusion: back to the crossroads

Activism for environmental justice has been accused of a ‘militant particularism’ (Harvey 1996) that cuts against an adequately critical and comprehensive analysis of social phenomena and against broad-based alliances needed to transform entrenched social, political, and economic systems. Likewise, some scholars have expressed concern that, because it grew up in relationship to, and even, in service of, a specific social movement, environmental justice theory has been too limited and instrumental in its scope (Swyngedouw and Heynen 2003). In answer to these critics, we do not seek to simply defend environmental justice, for all fields, including this one need a continual rethinking to remain fresh and to resolve internal contradictions and short-comings. Instead, we seek to reframe these two critiques towards the ends of improving the field. For this purpose, we again return to the metaphor of the crossroads.

Seeing environmental justice as positioned at a crossroads provides a vantage point that includes and integrates both the particular and the general. That is, what environmental justice can offer is a framework that can engage otherwise disparate disciplinary fields into a transdisciplinary conversation, and that can surface the commonalities of struggle on diverse issues in diverse places and among diverse populations. While environmental

justice activism does remain grounded in the places where people 'live, work, and play', both the social movement organization and certainly the literature on environmental justice is adopting a trans-local perspective and a strategic approach to scale (Kurtz 2002, 2003; Towers 2000; Williams 1999). Likewise, while the literature on environmental justice is closely tied to the social, cultural, and political practices of social movements, this relationship can be mutually enriching as theory and practice inform each other in a model of social praxis. Such praxis can allow for a more critical and reflective mode of community organizing, and at the same time, a practice of theorizing that is grounded in the lived realities of actual people, places, and problems, not merely abstractions of the same.

The notion of the crossroads also helps address the challenge of the defining environmental justice as a field. At the current moment, environmental justice, as an analytic and political term, has come to subsume and absorb both environmental racism and environmental inequality as well as broader notions of environmental politics. It has therefore become a 'master frame' that can apply to multiple domains. According to one of the leading political philosophers addressing environmental justice, this dynamism of scholarship is echoed in the movement itself. 'The environmental justice movement can be unified but it cannot be uniform. An insistence on uniformity will limit the diversity of stories of injustice, the multiple forms it takes, and the variety of solutions it calls for. ... unity without uniformity' (Schlosberg 2007, 535). But, if environmental justice can mean almost anything, does it risk a dilution and even loss of meaning and purpose? Similar concerns have been raised about the term and discourse of 'sustainable development' (Agyeman 2005) and 'development' itself as an 'anti-politics machine' (Ferguson 1994).

These are no mere semantic or linguistic questions. The Bush Administration and the EPA's recent (albeit failed) attempt to minimize a particular meaning of environmental justice exemplify the real threat to the politics and values of the movement. In June 2005, the EPA Administrator's office announced that it was removing race and class from special consideration in its definition of environmental justice and set a controversial and abbreviated public comment period. Although the EPA backed down from this position, it shows that this concept of environmental justice- is still quite vulnerable. According to a report by the EPA's inspector general (IG), 'the [EPA] changed the focus of the environmental justice program by deemphasizing minority and low-income populations and emphasizing the concept of *environmental justice for everyone*.' (Carroll and Weber 2004, Report No. 2004-P-00007). At the same time, a recent report written for the 20-year anniversary of the original Toxic Wastes and Race found that 'Environmental injustice in minority communities is as much or more prevalent today than 20 years ago' (Bullard et al. 2007).

Environmental justice scholarship must maintain its basic orientation at the center-point of the crossroads where it came into being: namely, a

critical analysis of power as it plays out in the (mal)distribution of harms and opportunities related to the environment with special attention to race and class. If this remains the center-point or pivot of environmental justice scholarship, then it can range outwards to incorporate new issues and locations while maintaining a dynamic relationship with the environmental justice movement, making valuable contributions to the realms of social theory.

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Jonathan K. London's research focuses on rural social movements, community participation in environmental and natural resource management, and questions of equity and agency in rural development. Has authored or co-authored articles on these topics in *Antipode*, *Children, Youth and Environments*, *Community Development, Environment, Science and Policy*, *Journal of Community Practice*, *Society and Natural Resources*, and *Practicing Anthropology* as well as the edited volume *Communities and Forests*. London directs the UC Davis Center for the Study of Regional Change and is also a Senior Researcher in the UC Davis Department of Human and Community Development and the Environmental Justice Project in the John Muir Institute of the Environment. He holds a BA in Environmental Studies from Brown University, a Masters of City and Regional Planning, and a PhD in Environmental Science Policy and Management from UC Berkeley.

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References

- Adger, Neil W., Tor A. Benjaminsen, Katrina Brown and Hanne Svarstad 2001. 'Advancing a Political Ecology of Global Environmental Discourses.' *Development and Change* **32**: 681–715.
- Agyeman, Julian 2002. 'Constructing Environmental (in)Justice: Transatlantic Tales.' *Environmental Politics* **11**: 31–53.
- Agyeman, Julian 2005. *Sustainable Communities and the Challenge of Environmental Justice*. New York, NY: New York University Press.
- Agyeman, Julian, Robert D. Bullard and Bob Evans (eds) 2003. *Just Sustainabilities: Development in an Unequal World*. Cambridge, MA: MIT Press.
- Alberti, Marina, John M. Marzluff, Eric Shulenberger, Gordon Bradley, Clare Ryan and Craig Zumbunnen 2003. 'Integrating Humans into Ecology: Opportunities and Challenges for Studying Urban Ecosystems.' *BioScience* **53**: 1169–79.
- Allen, Barbara L. 2003. *Uneasy Alchemy: Citizens and Experts in Louisiana's Chemical Corridor Disputes*. Cambridge, MA: MIT Press.
- Bali Principle of Climate Justice 2002. Retrievable at <http://www.ejnet.org/ej/bali.pdf>
- Beamish, Thomas D. 2002. *Silent Spill: The Organization of an Industrial Crisis*. Cambridge, MA: MIT Press.
- Been, Vicki and Francis Gupta 1997. 'Coming to the Nuisance or Going to the Barrios? A Longitudinal Analysis of Environmental Justice Claims.' *Ecology Law Quarterly* **24**: 1–56.
- Beve, Christine A., Brent K. Marshall and Steven J. Picou 2007. 'Environmental Justice and Toxic Exposure: Towards a Spatial Model of Physical Health and Psychological Well-being.' *Social Science Research* **36**: 48–67.
- Boone, Christopher G. 2002. 'An Assessment and Explanation of Environmental Inequity in Baltimore.' *Urban Geography* **23**: 581–95.
- Boone, Christopher G. and Ali Modarres 1999. 'Creating a Toxic Neighborhood in Los Angeles County: A Historical Examination of Environmental Inequality.' *Urban Affairs Review* **35**: 163–87.
- Bowen, William 2001. *Environmental Justice through Research Based Decision Making*. New York, NY: Garland.
- Boyte, Harry C. 2002. 'Information-Age Populism: Higher Education as a Civic Learning Organization.' Washington, DC: Council on Public Policy Education.
- Braz, Rose and Craig Gilmore 2006. 'Joining Forces: Prisons and Environmental Justice in Recent California Organizing.' *Radical History Review* Issue **96** (Fall 2006): 95–111.
- Brown, Phil 1995. 'Race, Class and Environmental Health: A Review and Systemization of the Literature.' *Environmental Research* **69**: 15–30.
- Brown, Phil 2007. *Toxic Exposures: Contested Illness and the Environmental Health Movement*. New York, NY: Columbia University Press.
- Brown, Phil, Brian Mayer, Stephen Zavestoski, Theo Luebke, Joshua Mandelbaum and Sabrina McCormick 2005. 'The Health Politics of Asthma: Environmental Justice and Collective Illness Experience.' Pp. 185–204 in *Power, Justice, and the Environment: A Critical Appraisal of the Environmental Justice Movement*, edited by David Naguib Pellow and Robert J. Brulle. Cambridge, MA: The MIT Press.
- Brulle, Robert J. and David N. Pellow 2006. 'Environmental Justice: Human Health and Environmental Inequalities.' *Annual Review of Public Health* **27**: 103–23.
- Bryant, Bunyan and Paul Mohai (eds) 1992. *Race and the Incidence of Environmental Hazards: A Time for Discourse*. Boulder, CO: Westview Press.
- Bullard Robert D. 2004. 'Environment and Morality: Confronting Environmental Racism in the United States.' *Identities, Conflict and Cohesion Program Paper #8*. New York, NY: United Nations Research Institute for Social Development.
- Bullard Robert D. and Glenn S. Johnson (eds) 1997. *Just Transportation: Dismantling Race and Class Barriers to Mobility*. Philadelphia, PA: New Society Publishers.
- Bullard, Robert 1990. *Dumping in Dixie: Race, Class and Environmental Quality*. Boulder, CO: Westview.
- Bullard, Robert forthcoming. *Deadly Waiting Game beyond Hurricane Katrina: Government Response, Unnatural Disasters, and African Americans*. New York, NY: University Press.
- Bullard, Robert D. (ed.) 1993. *Confronting Environmental Racism: Voices from the Grassroots*. Cambridge, MA: South End Press.

- Bullard, Robert D. (ed.) 2007. *Growing Smarter: Achieving Livable Communities, Environmental Justice, and Regional Equity*. Cambridge, MA: MIT Press.
- Bullard, Robert D., Paul Mohai, Robin Saha and Beverly Wright 2007. 'Toxic Wastes and Race at 20,' Retrieval at, <http://www.ejrc.cau.edu/TWART-light.pdf>
- Camacho, David E. (ed.) 1998. *Environmental Injustices, Political Struggles: Race, Class and the Environment*. Durham, NC: Duke University Press.
- Carroll, Daniel J. and Steven J. Weber 2004. 'EPA Needs to Consistently Implement the Intent of the Executive Order on Environmental Justice.' Report No. 2004-P-00007. Office of Inspector General. Retrieval at <http://www.epa.gov/oigearth/reports/2004/20040301-2004-P-00007.pdf>
- Carruthers, David 2007. 'Environmental Justice and the Politics of Energy on the US-Mexico Border.' *Environmental Politics* **16**: 394–413.
- Carruthers, David (ed.) 2008. *Environmental Justice in Latin America*. Cambridge, MA: MIT Press.
- Chakraborty, Jayajit and Marc P. Armstrong 1997. 'Exploring the Use of Buffer Analysis for the Identification of Impacted Areas in Environmental Equity Assessment'. *Cartography and Geographic Information System* **24**: 145–57.
- Chavis, Benjamin Jr and Charles Lee 1987. *United Church of Christ Commission on Racial Justice, Toxic Wastes and Race in the United States: A National Report on the Racial and Socio-Economic Characteristics of Communities with Hazardous Waste Sites*. New York, NY: United Church of Christ.
- Chawla, Louise et al. 2005. 'Don't Just Listen – Do Something! Lessons Learned about Governance Form The Growing Up In Cities Project.' *Children, Youth and Environments* **15**: 53–88.
- Chen, Don 2007. 'Linking Transportation Equity and Environmental Justice with Smart Growth.' Pp. 299–322 in *Growing Smarter: Achieving Livable Communities, Environmental Justice, and Regional Equity*, edited by Robert D. Bullard. Cambridge, MA: MIT Press.
- Clinton, William J. 1994. 'Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations' Order # 12898. (Washington, D.C., 11 February 1994).
- Cohen, Jeremy and Lakshman Yapa 2003. *A Blueprint for Public Scholarship at Penn State*. University Park, PA: Penn State U.
- Cohen, Stuart and Jeff Hobson 2004. 'Transportation Choices in the San Francisco Bay Area.' Pp. 99–120 in *Highway Robbery: Transportation Racism and New Routes to Equity*, edited by Robert Bullard, Glenn S. Johnson and Angel O. Torres. Boston, MA: South End Press.
- Cole, Luke W. and Sheila R. Foster 2001. *From the Ground Up: Environmental Racism and the Rise of the Environmental Justice Movement*. New York, NY: New York University Press.
- Corburn, Jason 2005. *Street Science: Community Knowledge and Environmental Health Justice*. Cambridge, MA: MIT Press.
- Desbiens, Caroline 2007. "'Water All Around You, You Cannot Even Drink": The Scaling of Water in James Bay/Eeyou Istchee.' *Area* **39**: 259–67.
- Di Chiro, Giovanna 1998. 'Environmental Justice from the Grassroots: Reflections of History, Gender and Expertise.' Pp. 104–35 in *The Struggle for Ecological Democracy: Environmental Justice Movements in the United States*, edited by Daniel J. Faber. New York, NY: Guilford Press.
- Dobson, Andrew 2003. 'Social Justice and Environmental Sustainability: Ne'er the Twain Shall Meet?' Pp. 83–98 in *Just Sustainabilities: Development in an Unequal World*, edited by Julian Agyeman, Robert Bullard and Bob Evans. London, UK: Earthscan.
- Downey Liam 1998. 'Environmental Injustice: Is Race or Income a Better Predictor?' *Social Science Quarterly* **79**: 766–78.
- Downey, Liam 2003. 'Spatial Measurement, Geography, and Urban Racial Inequality.' *Social Forces* **81**: 937–54.
- Downey, Liam 2005a. 'Assessing Environmental Inequality: How the Conclusions We Draw Vary According To the Definitions We Employ.' *Sociological Spectrum* **25**: 349–69.
- Downey, Liam 2005b. 'The Unintended Significance of Race: Environmental Racial Equality in Detroit.' *Social Forces* **83**: 971–1007.

- Downey, Liam 2006. 'Environmental Inequality in Metropolitan America in 2000.' *Sociological Spectrum* **26**: 21–41.
- Driskell, David 2002. *Creating Better Cities with Children and Youth: A Manual for Participation*. London, UK: UNESCO and Earthscan Publications.
- Egan, Michael 2002. 'Subaltern Environmentalism in the United States: A Historiographic Review.' *Environment and History* **8**: 21–41.
- Faber, Daniel and Deborah McCarthy 2003. 'Neo-liberalism, Globalization and the Struggle for Ecological Democracy: Linking Sustainability and Environment Justice.' Pp. 38–63 in *Just Sustainabilities: Development in an Unequal World*, edited by Julian Agyeman, Robert Bullard and Bob Evans. London, UK: Earthscan.
- Fan, Mei-Fang 2006. 'Nuclear waste facilities on Tribal Land: The Yami's struggles for environmental justice.' *Local Environment* **11**: 433–44.
- Ferguson, James 1994. *The Anti-politics Machine: Development, Depoliticization and Bureaucratic Power in Lesotho*. Minneapolis, MN: University of Minnesota.
- Fletcher, Thomas Hobbs 2004. *From Love Canal to Environmental Justice: The Politics of Hazardous Waste on the Canada-U.S. Border*. Peterborough, ONT: Broadview Press.
- Freudenburg, W. R. 2005. 'Privileged access, privileged accounts: toward a socially structured theory of resources and discourses.' *Social Forces* **84**(1): 89–114.
- Friedland, William 2003. 'Searching for Action Research and Teaching.' Pp. 59–70 in *Our studies, Ourselves: Sociologists' Lives and Work*, edited by Barry Glassner and Rosanna Hertz. Oxford, NY: Oxford University Press.
- Gilmore, Ruth Wilson 2007. *Golden Gulag: Prison, Surplus, Crisis and Opposition in Globalizing California*. Berkeley, CA: University of California Press.
- Glave, Dianne D. and Mark Stoll 2005. *To Love the Wind and the Rain: African Americans and Environmental History*. Pittsburgh, PA: University of Pittsburgh Press.
- Harvey, D. 1996. *Justice, Nature and the Geography of Difference*. Oxford, UK: Blackwell.
- Hillman, Mick 2006. 'Situated Justice in Environmental Decision-Making: Lessons from River Management in Southeastern Australia.' *Geoforum* **37**: 695–707.
- Hooke, Roger L. 2000. 'On the History of Humans as Geomorphic Agents.' *Geology* **28**: 843–6.
- Hooks, Gregory and Chad L. Smith 2004. 'The Treadmill of Destruction: National Sacrifice Areas and Native Americans.' *American Sociological Review* **69**: 558–75.
- Ikporkupo, Chris O. 2004. 'Petroleum, Fiscal Federalism and Environmental Justice in Nigeria.' *Space and Polity* **8**: 321–54.
- Ishiyama, Noriko 2003. 'Environmental Justice and American Indian Tribal Sovereignty: Case Study of a Land-Use Conflict in Skull Valley, Utah.' *Antipode* **35**: 119–40.
- Jarosz, Lucy 2004. 'Political Ecology as Ethical Practice.' *Political Geography* **23**: 917–27.
- Krieg, Eric 2005. 'Race and Environmental Justice in Buffalo, NY: A ZIP Code and Historical Analysis of Ecological Hazards.' *Society and Natural Resources* **18**: 199–213.
- Kuletz, Valerie L. 2001. *The Tainted Desert: Environmental Ruin in the American West*. London, UK: Routledge.
- Kurtz, Hilda E. 2002. 'The politics of environmental justice and the politics of scale: St. James Parish, Louisiana, and the Shintech Siting Controversy.' Pp. 249–73 in *Geographies of power: Placing scale*, edited by A. Herod and M. W. Wright. Malden, MA: Blackwell.
- Kurtz, Hilda E. 2003. 'Scale Frames and Counter-scale Frames: Constructing the Problem of Environmental Injustice.' *Political Geography* **22**: 887–916.
- LaDuke, Winona 2004. 'The Dumping Ground: Big Utilities Look to Native Lands to House Nuclear Waste.' *Multinational Monitor* **25**(11).
- Lavelle, Mariane and Marcia Coyle 1993. Unequal Protection: The Racial Divide in Environmental Law. Pp. 136–43 in *Toxic Struggles: The Theory and Practice of Environmental Justice*, edited by Hofrichter Richard. Philadelphia, PA: New Society.
- Lerner, Steve 2005. *Diamond: A Struggle of Environmental Justice in Louisiana's Chemical Corridor*. Cambridge, MA: MIT Press.
- Limerick, Patricia Nelson 1987. *The Legacy of Conquest: The Unbroken Past of the American West*. New York, NY: Norton.
- Lipsitz, George 1994. *Dangerous Crossroads: Popular Music, Postmodernism, and the Poetics of Place*. London, UK: Verso.

- Liu, Feng 1996. 'Urban Ozone Plumes and Population Distribution by Race and Class: A Case Study of New York and Philadelphia.' *Journal of the Air and Waste Management Association* 46(3): 207–15.
- London, Jonathan 2007. 'Power and Pitfalls of Youth Participation in Community Action Research: Lessons from Community Development in San Francisco.' *Children, Youth and Environments* 17: 406–32.
- London, Jonathan, Julie Sze and Raoul Liévanos 2008. California Environmental Justice: Social Movements and Public Policy. *UCLA Environmental Law Journal* 26: 2.
- McDonald, David A. 2002. *Environmental Justice in South Africa*. Athens, OH: Ohio University Press.
- McGurty, Eileen Maura 2007. *Transforming Environmentalism: Warren County, PCBs, and the Origins of Environmental Justice*. New Brunswick, NJ: Rutgers University Press.
- Mohai, Paul and Robin Saha 2007. 'Racial Inequality in the Distribution of Hazardous Waste: A National-Level Reassessment.' *Social Problems* 54: 343–70.
- Morello-Frosch, Manuel Pastor Jr., James Sadd, Carlos Porras and Michele Prichard 2005. Citizens, Science, and Data Judo: Leveraging Secondary Data Analysis to Build a Community-Academic Collaborative for Environmental Justice in Southern California. Pp. 371–92 in *Methods For Conducting-Community-Based Participatory Research For Health*, editors by Barbara A. Israel, Eugenia Eng, Amy J. Schulz and Edith A. Parker. San Francisco, CA: Jossey-Bass.
- Morello-Frosch, Rachel A. 2002. 'Discrimination and the Political Economy of Environmental Inequality.' *Environment and Planning C: Government & Policy* 20: 477–96.
- Morello-Frosch, Rachel, Manuel Pastor Jr. and James Sadd 2002. 'Integrating Environmental Justice and the Precautionary Principle in Research and Policy Making: The Case of Ambient Air Toxics Exposures and Health Risks among Schoolchildren in Los Angeles.' *Annals of the American Academy of Political and Social Science* 584: 47–68.
- Morland, Kimberly and Steve Wing 2007. 'Food Justice and Health in Communities of Color.' Pp. 171–88 in *Growing Smarter: Achieving Livable Communities, Environmental Justice, and Regional Equity*, edited by Robert D. Bullard. Cambridge, MA: MIT Press.
- Mvondo, Samuel Assembe 2006. 'Decentralized Forest Resources and Access of Minorities to Environmental Justice: An Analysis of the Case of the Baka in Southern Cameroon.' *International Journal of Environmental Studies* 63: 681–9.
- Myers, Nancy and Carolyn Raffensperger (eds) 2006. *Precautionary Tools for Reshaping Environmental Policy*. Cambridge, MA: MIT Press.
- Newell, Peter 2005. 'Race, Class and the Global Politics of Environmental Inequality.' *Global Environmental Politics* 5: 70–94.
- Pastor, Manuel, Robert Bullard, James Boyce, James Fothergill, Alice Morello-Frosch and Beverly Wright 2006. *In the Wake of the Storm: Environment, Disaster, and Race After Katrina*. New York, NY: Russell Sage Foundation.
- Pastor, Manuel Jr. 2007. 'Quién es Más Urbanista? Latinos and Smart Growth.' Pp. 73–102 in *Growing Smarter: Achieving Livable Communities, Environmental Justice, and Regional Equity*, edited by Robert D. Bullard. Cambridge, MA: MIT Press.
- Pastor, Manuel Jr., James L. Sadd and Rachel Morello-Frosch 2002. 'Who's Minding the Kids? Pollution, Public Schools, and Environmental Justice in Los Angeles.' *Social Science Quarterly* 83: 263–80.
- Pastor, Manuel Jr., Jim Sadd and John Hipp 2001. 'Which Came First? Toxic Facilities, Minority Move-In, and Environmental Justice.' *Journal of Urban Affairs* 23: 1–21.
- Paulson, Susan, Lisa L. Gezon and Michael Watts 2003. 'Locating the Political in Political Ecology: An Introduction.' *Human Organization* 62: 205–17.
- Peebles, Jennifer A. and Kevin M. DeLuca 2006. 'The Truth of the Matter: Motherhood, Community and Environmental Justice.' *Women's Studies in Communication* 29: 59–87.
- Pellow, David N. 2000. 'Environmental Inequality Formation.' *American Behavioral Scientist* 43: 581–601.
- Pellow, David N. 2002. *Garbage Wars: The Struggle for Environmental Justice in Chicago*. Cambridge, MA: The MIT Press.
- Pellow, David N. 2007. *Resisting Global Toxics: Transnational Movements for Environmental Justice*. Cambridge, MA: The MIT Press.
- Pellow, David N. and Lisa Park 2003. *The Silicon Valley of Dreams: Environmental Injustice, Immigrant Workers and the High-Tech Global Economy*. New York, NY: NYU Press.

- Pellow, David N. and Robert J. Brulle (eds) 2005. *Power, Justice, and the Environment: A Critical Appraisal of the Environmental Justice Movement*. Cambridge, MA: The MIT Press.
- Pendall, Rolf 2000. 'Local Land Use Regulation and the Chain of Exclusion.' *Journal of the American Planning Association* **66**: 125–42.
- Perkins, Nancy 2007. 'A Tale of Two Brownfield Sites: Making the Best of Times from the Worst of Times in Western Pennsylvania's Steel Valley. (Smart Brownfield Redevelopment for the 21st Century).' *Boston College Environmental Affairs Law Review* **34**: 503–32.
- Pflugh, K. K., J. A., Shaw and V. H. Leighann 1995. *Community-Based Educational Outreach to At-Risk Urban Anglers*. Philadelphia, PA: U.S. EPA.
- Pickett, Steward, Christopher Boone and Mary Cadenasso forthcoming. 'Ecology and Environmental Justice Relationships to Ecological Theory.' *Ecology and Society*.
- Powell, John A. 2007. 'Race, Poverty and Urban Sprawl: Access to Opportunities Through Regional Strategies.' Pp. 51–72 in *Growing Smarter: Achieving Livable Communities, Environmental Justice, and Regional Equity*, edited by Robert D. Bullard. Cambridge, MA: MIT Press.
- Prakash, Swati 2007. 'Beyond Dirty Diesels: Clean and Just Transportation in Northern Manhattan'. Pp. 273–98 in *Growing Smarter: Achieving Livable Communities, Environmental Justice, and Regional Equity*, edited by Robert D. Bullard. Cambridge, MA: MIT Press.
- Prilleltensky, Issac 2001. 'Value-Based Praxis in Community Psychology: Moving Toward Social Justice and Social Action.' *American Journal of Community Psychology* **29**(5): 747–78.
- Pulido, Laura 1996. *Environmentalism and Economic Justice: Two Chicano Struggles in the Southwest*. Tucson, AZ: The University of Arizona Press.
- Pulido, Laura 2000. 'Rethinking Environmental Racism: White Privilege and Urban Development in Southern California.' *Annals of the Association of American Geographers* **90**: 12–40.
- Pulido, Laura and Devon G. Peña 1998. 'Environmentalism and Positionality: The Early Pesticide Campaign of the United Farm Workers' Organizing Committee, 1965–1971.' *Race, Gender & Class* **6**: 33–50.
- Robbins, Paul 2004. *Political Ecology: A Critical Introduction*. Malden, MA: Blackwell Publishing.
- Sachs, Noah 1996. 'The Mescalero Apache Indians and Monitored Retrievable Storage of Spent Nuclear Fuel: A study in Environmental Ethics.' *Natural Resources Journal* **36**: 881–912.
- Sadd, James L., Manuel Pastor, Jr., J. Thomas Boer and Lori D. Snyder 1999. "'Every Breath You Take ...': The Demographics of Toxic Air Releases in Southern California.' *Economic Development Quarterly* **13**: 107–23.
- Sanchez, Thomas W., and James F. Wolf 2007. 'Environmental Justice and Transportation Equity.' Pp. 249–72 in *Growing Smarter: Achieving Livable Communities, Environmental Justice, and Regional Equity*, edited by Robert D. Bullard. Cambridge, MA: MIT Press.
- Sandler, Ronald and Phaedra C. Pezzullo (eds) 2007. *Environmental Justice and Environmentalism: The Social Justice Challenge to the Environmental Movement*. Cambridge, MA: MIT Press.
- Santana, Déborah Berman 2005. 'Vieques: The Land, the People, the Struggle, the Future.' Pp. 222–38 in *The Quest for Environmental Justice: Human Rights and the Politics of Pollution*, edited by Robert Bullard. San Francisco, CA: Sierra Club Books.
- Schlosberg, David 2004. 'Reconceiving Environmental Justice: Global Movements and Political Theories.' *Environmental Politics* **13**: 517–40.
- Schlosberg, David 2007. *Defining Environmental Justice: Theories, Movements and Nature*. Oxford, UK: Oxford University Press.
- Schnaiberg, Allan and Kenneth Alan Gould 1994. *Environment and Society: The Enduring Conflict*. New York, NY: St. Martin.
- Schweitzer, Lisa 2006. 'Environmental Justice and Hazmat Transport: A Spatial Analysis in Southern California.' *Transportation Research Part D* **11**: 408–21.
- Schweitzer, Lisa and Abel Valenzuela Jr 2004. 'Environmental Injustice and Transportation: The Claims and the Evidence.' *Journal of Planning Literature* **18**: 383–98.
- Schweitzer, Lisa and Max Stephenson Jr 2007. 'Right Answers, Wrong Questions: Environmental Justice as Urban Research.' *Urban Studies* **44**: 319–37.
- Skocpol, Theda 1985. 'Bringing the State Back in: Strategies in Analysis from Current Research'. Pp. 3–43 in *Bringing the State Back In*, edited by Peter B. Evans, Dietrich Rueschemeyer and Theda Skocpol. Cambridge, UK: Cambridge University Press.
- Smith, Linda Tuhiwai 1999. *Decolonizing Methodologies: Research and Indigenous Peoples*. New York, NY: St. Martins Press.

- Sobotta, Robin R., Heather E. Campbell and Beverly J. Owens 2007. 'Aviation Noise and Environmental Justice: The Barrio Barrier.' *Journal of Regional Science* **47**: 125–54.
- Swyngedouw, Erik and Nikolas C. Heynen 2003. 'Urban Political Ecology, Justice and the Politics of Scale.' *Antipode* **35**: 898–918.
- Szasz, Andrew and Michael Meuser 1997. 'Environmental Inequalities: Literature Review and Proposals for New Directions in Research and Theory.' *Current Sociology* **45**: 99–120.
- Sze, Julie 2005a. 'Toxic Soup Redux: Why Environmental Racism and Environmental Justice Matter after Katrina.' Understanding Katrina: Perspectives from the Social Sciences. Social Sciences Research Council, retrievable at <http://understandingkatrina.ssrc.org/Sze/>
- Sze, Julie 2005b. Race and Power: An Introduction to Environmental Justice Energy Activism. Pp. 101–15 in *Power, Justice and the Environment: A Critical Appraisal of the Environmental Justice Movement*, edited by David N. Pellow and Robert J. Brulle. Cambridge, MA: MIT Press.
- Sze, Julie 2007. *Noxious New York: The Racial Politics of Urban Health and Environmental Justice*. Cambridge, MA: The MIT Press.
- Sze, Julie, Prakash, Swati and Alice McIntosh 2005. Empowering Youth and Creating Healthy Environments in Northern Manhattan: WE ACT's Youth Programs. *Children, Youth and Environments* **15**(1): 265–77. Invited Field Report for *Children, Youth and Environments*. Retrievable at http://www.colorado.edu/journals/cye/15_1/f4_WEACT.pdf
- Taylor, Dorceta E. 2000. 'The Rise of the Environmental Justice Paradigm: Injustice Framing and the Social Construction of Environmental Discourses.' *American Behavioral Scientist* **43**: 508–80.
- Taylor, Dorceta E. 2002. 'Race, Class, Gender and American Environmentalism.' United States Department of Agriculture, Forest Service. <http://www.fs.fed.us/pnw/pubs/gtr534.pdf>
- Tilly, Charles and Sidney Tarrow 2006. *Contentious Politics*. Boulder, CO: Paradigm Publishers.
- Tokar, Brian 1997. *Earth For Sale: Reclaiming Ecology in the Age of Corporate Greenwash*. Boston, MA: South End Press.
- Towers, G. 2000. Applying the political geography of scale: Grassroots strategies and environmental justice. *Professional Geographer* **52**: 23–36.
- United Church of Christ 1987. *Toxic Wastes and Race in the United States*. New York, NY: Commission for Racial Justice.
- United Church of Christ Commission for Racial Justice 1991. *The Proceedings of the First National People of Color Environmental Leadership Summit*. New York, NY: UCC.
- United States Institute of Medicine 1999. *Toward Environmental Justice: Research, Education, and Health Policy Needs*. Washington, DC: National Academy Press.
- Walker, Peter 2005. 'Political Ecology: Where is the Ecology?' *Progress in Human Geography* **29**(1): 73–82.
- Washington, Sylvia Hood 2005. *Packing Them in: An Archaeology of Environmental Racism in Chicago, 1865–1954*. New York, NY: Lexington Books.
- Washington, Sylvia Hood, Paul Rosier and Heather Goodall (eds) 2006. *Echoes from the Poisoned Well: Global Memories of Environmental Injustice*. Lanham, MD: Lexington Books.
- Watkins, Kevin 2007. Fighting climate change: Human solidarity in a divided world. http://hdr.undp.org/en/media/hdr_20072008_summary_english.pdf
- Watson, Matt and Harriet Bulkeley 2005. 'Just Waste? Municipal Waste Management and the Politics of Environmental Justice.' *Local Environment* **10**: 411–26.
- White, Richard 1991. *It's Your Misfortune and None Of My Own': A History Of The American West*. Norman OK: University of Oklahoma Press.
- Whiteside, Kerry H. 2006. *Precautionary politics: principle and practice in confronting environmental risk*. Cambridge, MA: MIT Press.
- Williams, Robert W. 1999. 'Environmental Injustice in America and its Politics of Scale.' *Political Geography* **18**: 49–74.
- Worster, Donald 1992. *Rivers Of Empire: Water, Aridity, and the Growth of the American West*. New York, NY: Oxford University.
- Zimmerer, Karl S. and Thomas J. Bassett (eds) 2003. *Political Ecology: An Integrative Approach to Geography and Environment-Development Studies*. New York, NY: The Guilford Press.