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**Abstract**

Environmental benefits and risks are not distributed equally. All around the world, marginalized social groups are disproportionately exposed to environmental hazards that significantly degrade their health, limit their socioeconomic opportunities, and reinforce their marginal social positions. While many solutions have been proposed to rectify these dynamics, none have been as influential as Environmental Justice. Environmental Justice, or EJ, is both a body of research and a social movement that seeks to identify environmental discrimination, draw attention to it, and work through a number of political and community channels to restore equitability when necessary. In this sense, EJ plays a vital role in improving the environmental experiences for the world's most vulnerable social groups. This chapter will discuss theoretical and conceptual foundations of EJ and related concepts, discoveries resulting from EJ-oriented studies in the US and other world regions, new fields relying on EJ methodologies, and both the global and local implications of working toward EJ. While no chapter can fully summarize the entire body of EJ research, this chapter provides a comprehensive overview that emphasizes the vital role that EJ plays in restoring justice and equity for those who need it most.

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## Chapter 9

# Environmental Justice in the US and Beyond: Frameworks, Evidence, and Social Action

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### 9.1 Introduction

Our definition of the environment has greatly expanded through time. No longer simply understood as abstract ecosystems or impersonal terrains, the environment has come to represent the quality of the areas in which we live, grow, and define ourselves as human beings. In this sense, the environment is better exemplified by terms such as “home,” or “community;” displaying the intimate relationship between the environment and every resident of this planet. But what happens when the environment, this home that we all collectively share, is experienced inequitably by marginalized social groups? As countless studies have showed, environmental risks and benefits are not distributed equally; some of the world’s most vulnerable social groups experience disproportionate exposure to environmental hazards while simultaneously lacking the political and economic tools necessary to restructure

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their experiences. This means that, despite the fact we each relate to the environment in very personal ways, the nature of that relation is dependent on the privileges and oppressions we experience as members of our respective societies. Quite simply, some disproportionately enjoy the benefits of the environment, while others are unequally exposed to risks.

Existing as both a body of research and a political movement, environmental justice (EJ) has sought to amplify the voices and experiences of environmentally-oppressed social groups and incite meaningful change for them; change that will improve their circumstances and allow them to reach their highest potential as human beings (Bryant 1995). It is clear that the field of EJ does not simply exist to expand scientific knowledge, but to fundamentally rectify the injustices present in contemporary societies. As such, EJ is a work of great magnitude and importance to our world today. The purpose of this chapter is to provide an integrated discussion of theoretical and conceptual issues of EJ, its substantive concerns, global perspectives on EJ, Green Crime as a new derivative of EJ, and social action to promote EJ.

## 9.2 Theoretical and Conceptual Issues

### 9.2.1 Definitions of Environmental Justice

While multiple definitions of EJ exist, Bryant (1995, p. 6) defines it as “cultural norms and values, rules, regulations, behaviors, policies, and decisions to support sustainable communities where people can interact with confidence that the environment is safe, nurturing, and productive. EJ is served when people can realize their highest potential.” This definition encompasses the core of EJ: all communities, regardless of their demographics, should receive equal treatment and be able to participate in environmental-decision making practices. He (1995, p. 6) continues, “EJ is supported by decent paying safe jobs; quality schools and recreation; decent housing and adequate health care; democratic decision-making and personal empowerment; and communities free of violence, drugs and poverty.”

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While the definition provided by Bryant (1995) is helpful, what EJ means to a particular community is dependent upon its cultural history, associated movements, and specific desires for justice (Schlosberg 2009). Cultural aspects matter because there is variation in the characteristics of the people that are impacted, as well as *how* they have been impacted. Movements are also important to examine, as they show how a community has chosen to deal with environmental issues; specifically, whether they seek federal assistance, work apart from the government through community-based organizing, or engage in a combination of both (Schlosberg 2009). It is also important to evaluate the degree of resistance exhibited by affected communities and to understand the solutions that the community prefers for the EJ issue at hand. In sum, it is crucial that environmental decision-makers (and EJ scholars) who seek to understand and assist in ameliorating community EJ issues consider the characteristics, values, and preferred actions of the community.

### 9.2.2 Types of Justice

When thinking about EJ, there are three important types of justice that are relevant to communities seeking environmental equity. The first is distributive justice, which is centered on the belief that social benefits and burdens should be distributed equally among varying communities (Bell and Carrick 2018). Distributive injustice, as such, occurs when these benefits and burdens are apportioned unequally along lines of social positioning. In relation to the environment specifically, distributive injustice could be exemplified by a community of color being disproportionately exposed to pollution from local hazardous waste incinerators. The second is form of justice is procedural justice; this is achieved when state/institutional decision-making processes are performed equitably with respect to the interests and values of diverse stakeholders. When processes are inequitably implemented, stakeholder groups differ in their level of participation according to their social positioning. An exemplar of the resulting procedural injustices could be the exclusion of non-English speaking communities in environmental decision-making processes conducted only in English. Intergenerational justice, another form of justice, reflects both distributive and procedural justice. Specifically, intergenerational justice is action enacted across generations to prevent contemporary injustices from replicating themselves in the future (Schlosberg 2009). In the context of EJ, this could be exemplified by a community receiving effective, long-term solutions to regional water pollution, thereby preventing future residents from experiencing those particular environmental burdens.



### 9.3 Environmental Racism

Environmental racism is a specific case of environmental injustice (Pellow 2000). “Environmental racism refers to any environmental policy, practice, or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race, [ethnicity,] or color” (Bullard and Johnson 2000, p. 559). Environmental racism occurs in the US due to the entrenched power structure, whereby whites have historically controlled social institutions, enabling ideologies of white privilege and white supremacy to environmentally marginalize particular groups based on racial constructions. White privilege relates to how the whites continue to dominate many segments of social life; it is this power that enables them to monopolize opportunities (Pulido 2015). This oppressive reality has been “justified” through white supremacy, or the belief that whites are superior and therefore entitled to complete ownership of all resources (Pulido 2015). The monopolization of the opportunity structure by whites, often in the forms of educational and economic empowerment, results in substantial race-based inequalities (Pulido 2015). As a result, environmental racism becomes the visible outcomes of these dynamics.

### 9.4 Development of Environmental Injustices

Environmental racism and injustices emerge through complex processes that Pellow (2000) relates to linkages between socio-historical process and multi-stakeholder negotiations. Socio-historical processes have shaped environmental injustices (Pellow 2000). In US history, race has served as the most influential factor in environmental injustices. In regard to how and why race operates, historical relations have profoundly influenced how marginalized groups have settled and lived. For example, the experience of slavery for African-Americans ultimately lead to segregation, which affected not only their housing situations, but also their levels of education, economic resources, and social power. While this is only one example, it nonetheless suggests how certain racial groups (particularly whites) have historically benefited from the structural oppression of other demographics (Pellow 2000).

Fights for EJ involve multiple stakeholders with shifting interests and allegiances that do not conform to the traditional one victim-one perpetrator scenario. When thinking of EJ issues, it is easy to assume that targeted communities are monolithic and simply overpowered, but this is rarely the case. Opening a toxic waste facility, for example, typically requires negotiation with stakeholders and members of the affected community (Pellow 2000). Desires within the community may be complex and multifaceted and it is often not possible to effectuate broad-based resistance due the distribution of power both within and beyond the community. Stakeholder interests may also change over time, further complicating decision-making (Pellow 2000).



## 9.5 Substantive Concerns

Those conceptual underpinnings have been substantiated and further developed through more than 35 years of empirical research on distributive EJ. This section provides an overview of the substantive contributions to knowledge made by distributive EJ research in the US and other world regions, as well as new knowledge of EJ flowing from the emerging field of green criminology.

### 9.5.1 US Perspectives

#### 9.5.1.1 Race and Ethnicity

The United Church of Christ (UCC 1987) sponsored the first study to identify race as the strongest predictor of location for hazardous and toxic waste facilities in the United States. It established an important relationship between race and toxic pollution—one indicating unequal environmental burdens for communities of color—that has been subsequently found across a multitude of other studies. Soon thereafter, for example, Bullard's (1994) classic work highlighted how racial/ethnic minority communities were disproportionately affected by locally unwanted land uses (LULUs), including energy production facilities, toxic waste facilities, and landfills. In the ensuing decades, other researchers have documented that air pollution, soil pollution, lead poisoning, water contamination, and the location of landfills, toxic and solid waste facilities, and incinerators disproportionately burden African American populations (Ash and Boyce 2018; Brulle and Pellow 2005a, b; Bullard 1993; Bullard and Johnson 2000; Mohai et al. 2009).

African Americans were the initial focus in EJ literature, but the scope has since expanded to document similar discriminatory patterns for Hispanics and Asian Americans (Grineski et al. 2013, 2017). For example, in US census tracts, an increase in the proportion of Hispanic and Asian American residents relative to the proportion of white residents is associated with a significantly higher lifetime cancer risk from hazardous air pollutants (Grineski et al. 2017). Native Americans have been also been of focus in studies documenting their disproportionate exposure to contamination of food and water supplies (Gochfeld and Burger 2011; Harris and Harper 1997, 2011).

#### 9.5.1.2 Socioeconomic Status (SES)

Though race is most important in the US context, socioeconomic status (SES; often measured by income, educational attainment, occupational status, and housing tenure) is also a strong correlate for the distribution of environmental hazards. For example, a statewide study in North Carolina found that increases in household





income were associated with lower concentrations of particulate matter less than 2.5  $\mu\text{m}$  in diameter ( $\text{PM}_{2.5}$ ), a type of air pollutant which poses well-known risks to human health, at the census tract-scale (Gray et al. 2013). Higher concentrations of  $\text{PM}_{2.5}$  were also associated with increases in the percent of the population in poverty and percent with less than a high school education (Gray et al. 2013). Noise from road traffic, air traffic, and industry also have documented associations with SES, as researchers have found that census block groups in the contiguous U.S. with higher proportions of renters, impoverished people, unemployed residents, and residents with less than a high school education are disproportionately exposed to noise pollution (Casey et al. 2017). In a national study, researchers found that renter status, lower income and lower education were associated with greater exposure to pollution from Toxics Release Inventory (TRI) facilities (Pais et al. 2014), which include of large industrial point sources of pollution. Apart from residential exposure, people of low SES are also more likely to work jobs that may increase their exposure to hazardous chemicals (Evans and Kantrowitz 2002). In Phoenix, Arizona, where extreme heat is a locally relevant hazard, low-income neighborhoods contain less green vegetation, increasing their exposure to extreme surface temperatures and heat stress (Harlan et al. 2006; Jenerette et al. 2007).

### 9.5.1.3 Gender and Sexual Orientation

While studied less often than race and SES, gender and sexual orientation are also predictive of disproportionate hazard exposure and therefore important to include in the conversation. In terms of gender, single-mother households are overrepresented in US census tracts that are located near industrial facilities; and controlling for other variables including race and SES, tracts with higher percentages of single mother households (relative to other types of family groups) were also exposed to greater concentrations of toxic chemicals (Downey and Hawkins 2008). Census block groups in El Paso county (Texas) with high proportions of female-headed households (with or without children) were found to be more exposed to hazardous air pollutants as compared to census block groups with low proportions of female-headed households (Collins et al. 2011).

Building off this earlier focus on gender, recent EJ research has examined associations between sexual orientation and the degree of hazard exposure. The first study to examine this found that census tracts in the Houston Metropolitan Statistical Area (MSA) with clusters of same-sex partner households were predictive of exposure and cancer risks from hazardous air pollutants (Collins et al. 2017a). A national follow-up study found that same-sex partner enclaves in the US experience disproportionately high exposure to hazardous air pollutants, and that the associations were stronger than they were for the proportion black and Hispanic resident variables. The same-sex partner finding is largely driven by the presence of gay male partners, as they were associated with greater residential air pollutant risks than was lesbian partnering (Collins et al. 2017b). This pattern has resulted from the social stigmatization of sexual minorities and their spatial exclusion with other



marginalized people and LULUs in inner-city spaces across many US cities (Collins et al. 2017b); this process has been more acute for men as lesbian women have a more dispersed pattern of residence (Spring 2013).

#### 9.5.1.4 Immigrant Status

Though less often examined in EJ literature, immigrant status is an important variable to consider. The foreign-born population is rapidly growing in the US and is projected to reach 42 million by 2025 (Cunningham et al. 2008), this indicates a need to better understand how immigrant populations are affected by environmental hazards. Immigrants tend to reside in urban areas where employment opportunities are abundant, where housing is cheaper, and where public transportation is sufficient (Massey 1985). US counties with large proportions of hazardous waste facilities and Superfund sites are more likely to have high percentages of immigrant populations (Hunter 2006). Superfund sites are designated by the US EPA as needing long-term cleanup of hazardous waste. In El Paso county (Texas), census block groups with the highest proportions of residents who were not born in the US and who were not citizens of the US were found to be disproportionately exposed to carcinogenic air pollution relative to block groups with the lowest proportions of those two variables (Collins et al. 2011). A qualitative interview-based study with local Hispanic householders in Greater Houston, Texas offers potential explanations for why immigrant households have greater exposure than other households. While both immigrant and non-immigrant Hispanic households in the study were constrained economically from accessing less polluted environments, immigrant households were attracted to the sociocultural benefits of living in co-ethnic enclaves, e.g., proximity to work opportunities and family members feeling more comfortable and secure in their communities, which led them to environmentally riskier neighborhoods (Hernandez et al. 2015).

#### 9.5.1.5 Intracategorical Studies

Without dismissing the studies noted above, analyses focused on racial/ethnic differences in hazard exposure have typically used monolithic race and ethnicity variables when assessing environmental inequalities (such as percentage of census tract residents who are Black or Hispanic) (Ard 2015; Chakraborty 2009; Downey and Hawkins 2008). This approach to categorizing race/ethnicity fails to account for complex differences within racial/ethnic groups. A consideration of within-group differences can be achieved through an intracategorical approach, first introduced by McCall (2005) in her influential work on “intersectionality.” This method “[focuses] on particular social groups at neglected points of intersection...in order to reveal the complexity of lived experience within such groups” (McCall 2005, p. 1773).

Intracategorical approaches for examining differences within racial/ethnic groups were first introduced to EJ research by Collins et al. (2011). Specifically, they applied an intracategorical lens to study unequal risk to hazardous air pollutants in El Paso, Texas, which identified several risk factors within the Hispanic population (e.g., lack of English proficiency, foreign-birth, age over 65, and low social class). This initial effort led to subsequent intracategorical studies (e.g., Grineski et al. 2013, 2015; Chakraborty et al. 2017), which applied the approach to Latino/a populations in several US cities.

For example, several studies were conducted in Miami due to its large and diverse Hispanic population. An individual-level study found that people of Cuban descent were more likely to reside in Miami neighborhoods disproportionately exposed to traffic pollution than non-Hispanic Whites and members of other Hispanic ancestral groups (i.e., Colombian, Mexican and Puerto Rican) (Chakraborty et al. 2017). The same study also found increased risks for unemployed versus employed Hispanics and foreign-born versus US-born Hispanics. A census tract level study also found that Miami neighborhoods with higher percentages of people of Cuban and Colombian ancestry (relative to non-Hispanic Whites) had higher levels of traffic pollution, but those with high percentages of people of Mexican descent had lower levels (Grineski et al. 2013).

While the majority of intracategorical EJ studies have focused on Hispanic populations, other recent research efforts have expanded this approach to other social groups. Within Asian populations, for example, a national study found intra-ethnic differences in relation to cancer risk from hazardous air pollutants. Specifically, neighborhoods with higher percentages of Chinese, Korean, and South Asians (relative to the percentage of whites) had significantly higher risk. Tracts with higher concentrations of Asians speaking a non-English language (vs. those speaking English) and Asians that are US-born (vs. those that are foreign-born) also had significantly greater risks from hazardous air pollutants (Grineski et al. 2017). On a smaller spatial scale, women of Japanese and Korean ancestry in California had significantly higher exposure to carcinogens linked to breast cancer than white women; this was otherwise masked by considering Asians alone (Quach et al. 2014). Similar results have also been found for Black Americans living in economically-deprived census tracts (Liévanos 2015). These studies reinforce the importance and value of intracategorical perspectives in US EJ studies.

### 9.5.2 Global Perspective

In analyzing the influence of these variables on hazard exposure and risk, it is clear that environmental injustices are well documented in the US. This makes sense, as both the EJ movement and research field originated in the United States. However, research has revealed that other world regions exhibit patterns of environmental injustice. Research efforts such as the EJ Atlas, which documents global social conflicts as they exist in relation to the environment, help contextualize the



widespread dynamics of environmental injustice (Temper et al. 2015). In addition, the work of other leading EJ researchers can draw attention to the globalized political economic processes that are often responsible for these situations and their tendency to marginalize the world's most vulnerable populations (Bullard and Lewis 1996; Cutter 1995; Pellow 2007).

In the following section, we discuss specific world regions on an individual basis to clarify their specific dynamics of environmental injustice. We focus on environmental injustices in Europe, Latin America, and Asia. While the still-generating nature of EJ research limits our ability to adequately cover other major world regions such as Africa, the Middle East, and Oceania, we include brief descriptions of well-documented cases. Our review is primarily limited to the English language literature.

### 9.5.2.1 Europe

Like other developed world regions, efforts towards economic prosperity have coincided with the creation of disproportionate hazard exposure in Europe (Laurent 2011). This is particularly true along lines of SES, which has been examined more often than race in European EJ studies. For example, a study of the European Union in its entirety showed a correlation between lower levels of income and employment (both of which are major indicators for economic marginalization) and higher levels of refinery emissions (Gouldson 2006). A study in Germany, for example, found such a pattern, as toxic release facilities in the city of Hamburg were disproportionately located within impoverished neighborhoods (Raddatz and Mennis 2013).

Apart from SES, immigrant status has also been associated with exposures in Europe. For example, the Hamburg study also found that the facilities were disproportionately situated in communities with higher immigrant concentrations. Similarly, French towns with higher proportions of foreign-born residents were more likely to house hazardous waste facilities than those with larger French-born populations (Laurian 2008). Such patterns were also replicated in Italy, where agricultural migrant workers face serious health risks from toxic pesticides and harsh working conditions (Perrotta 2016). In this sense, there are clear disparities along the lines of immigrant status in Europe.

While studied less often, there are racial/ethnic patterns of inequality in Europe too. Roma communities are perhaps one of the most important examples of this, as their experiences as an ethnic minority in multiple European countries can shed light on the EJ dynamics of the region at large. Several studies have found that landfills or illegal waste dumps are often concentrated in Roma communities, alongside limited access to clean water, and communal green spaces, and other important environmental resources (Harper et al. 2009; Steger and Filčák 2008). While these patterns of ethnic and racial discrimination do not always present themselves in other European contexts (see Jones et al. 2009), their widespread



presence in Roma communities nonetheless indicates the influence of race/ethnicity in regional environmental injustices.

### 9.5.2.2 Latin American: The Global South

While still developing, EJ research efforts in Latin America are generally oriented toward the repercussions of economic development. These studies have mainly focused on the urbanization patterns present in the continent and Caribbean, as an estimated 80% of residents now live in urban settings (United Nations 2014). Due to the rapid nature of this demographic shift, it has been difficult for respective governments to prevent the construction of informal shanty towns along urban peripheries (Jiménez 2015). These settlements, generally comprised of socioeconomically-marginalized citizens, tend to be disproportionately affected by natural hazards, industrial pollutants, and lack access to both clean water and effective waste management (Vasquez et al. 2018). In this sense, they experience significant environmental injustices as a result of economic endeavors present in the region.

Similar dynamics have also presented themselves along the US-Mexico border. As the maquiladora (export processing) economic sector has grown, hazardous methods of production have generally been exported to American-owned factories in Mexico (Grineski and Juárez-Carrillo 2012). This has led to disproportionate degrees of pollution and environmental degradation in Mexican territories, though specifically in impoverished areas without stable infrastructure, waste management, and piped water (Grineski and Collins 2010). Because the maquiladora sector offers employment opportunities that are inaccessible in other locations, migrants from more marginal parts of Mexico continue to come to the border region and experience the health repercussions of these environmental injustices (Grineski et al. 2012).

Research in Chile has demonstrated major environmental injustices, specifically in relation to its neoliberal political structure, intense urbanization, and geographic susceptibility to natural hazards. For example, the country is home to several moderately-sized cities labeled “sacrifice zones” due to their high levels of industrial pollutants (Vasquez et al. 2018). These areas suffer from high rates of poverty, limited access to clean water, and insufficient public services (Fundacion Terram 2014). Though some efforts are being made to correct these issues by local governments, distributional and procedural environmental injustices persist in Latin America.

### 9.5.2.3 Asia

Though Asia is also a relatively new region for EJ research, several influential studies in China have uncovered disproportionate exposure to environmental hazards. This is best summarized by the cancer village phenomenon present in



mainland regions, where the number of cancer patients in certain territories is abnormally high (Liu 2010). This disparity is thought to be the result of water pollution resulting from economic development and is generally more concentrated in impoverished villages (Liu 2010). Similarly, economically-marginalized residents of Hong Kong have been exposed to higher concentrations of vehicular air pollution than their wealthier counterparts (Fan et al. 2012). These findings suggest that socioeconomic status is an influential variable for environmental inequalities in China.

Residents of South and Southeast Asia also experience patterns of environmental discrimination and the documented cases are mainly associated with resource extraction and utilization. These patterns of injustice are mainly due to the levels of economic marginalization present in these regions, as poverty creates both a dependency on natural resources and a vulnerability to their economic exploitation. In Bangladesh, for example, some subsistence-based Indigenous groups have experienced decreased access to vital resources as a result of the non-Indigenous population's economic ventures, social privileges, and nonobservance of subsistence-based lifestyles (Cha 2006). Similarly, the growth of Thailand's economy and subsequent electricity demands have led to the exportation of power projects to marginalized communities in both Laos and Myanmar (Middleton 2012). While economic disenfranchisement is partially to blame for these disparities, both Laos and Myanmar exhibit serious restrictions to community organization and media freedom that can be important tools of resistance (a reality that has been proven by Thai communities' own success with environmental protest and forced-relocation of energy projects) (Middleton 2012). What this means, then, is that vulnerable Lao and Myanmar people are bearing the social and environmental costs that come with such endeavors without receiving many benefits. The costs include pollution, increased likelihood of hazard, and decreased access to the natural resources upon which rural communities are dependent.

In discussing EJ research in South Asia, it is important to focus on India specifically due to its identification as one of the major emerging economies of the world. As other examples have indicated, economic development is often associated with the presence of environmental injustices for vulnerable communities. Chakraborty and Basu (2019) found evidence of this in relation to the placement of industrial facilities known as major accident hazard (MAH) units. It was found that socially-disadvantaged communities such as those with high concentrations of people from Scheduled Castes and Scheduled Tribes house higher densities of non-publicly funded MAHs. Additionally, variables representing economic marginalization (e.g. higher urbanization and lower home ownership) were also predictive of MAH density (Chakraborty and Basu 2019). This pattern of environmental injustice was similar to that found in a national level study, which found that districts in India with higher proportions of socioeconomically-marginalized people were more likely to be large generators of hazardous waste (Basu and Chakraborty 2016).





#### 9.5.2.4 Africa, the Middle East and Oceania

Though the EJ literature is not as well developed, it is important to briefly discuss environmental injustices as they exist in Africa, the Middle East, and Oceania; this will allow for a more comprehensive analysis of EJ issues from a global perspective. Beginning first with Africa, most EJ research has been oriented in South Africa due to the repercussions of its apartheid system (Leonard 2018). The institution of apartheid, along with its promotion of systemic racism, led to a situation in which regional mining companies often acted without regulation; in this sense, corporations often influenced the construction and application of governmental policies. When apartheid was disbanded, the political influence of mining companies still remained; this has led to a decrease in decision-making opportunities for socially marginalized communities and, subsequently, the disproportionate placement of pollutant mines in their communities (Leonard 2018). Similar dynamics have presented themselves in the sub-Saharan countries of Nigeria, Ghana, and Uganda. Because people in these countries typically lack technical skills and access to capital as a result of marginalization, they have essentially been forced to rely on multinational enterprises (MNEs) to utilize and export their natural resources (Aldinger 2013). These industries, often located in the poorest, most isolated communities in the country, include energy projects that are responsible for major water and air pollution, denial of access to traditional lands, and deforestation (Aldinger 2013).

The Middle East also houses environmental injustices, though these have only been briefly examined when compared to other world regions like the Global North and the Global South. Regardless, the literature that does exist generally indicates major disparities based on lines of race/ethnicity and economy status in Israel. For example, a study found that green spaces in mixed-race cities (e.g. where both Arab and Israelis inhabit the city, rather than abide in ethnic enclaves) are substantially less accessible to the Arab population and economically-marginalized demographics (Omer and Or 2005). Similarly, Shmueli found that Arab populations experience the hazards of industrial parks located within neighboring Jewish communities while gaining none of the revenues generated by the facilities (2008). This is not surprising when coupled with other contributions to the literature, which have indicated that Arab-identifying residents of Israel receive poorer forms of waste management than their Israeli counterparts (Tal 2002), and also earn less income (Omer and Or 2005). Similar patterns of environmental injustice are also present in Iraq and Afghanistan. For example, US military efforts that have frequented these areas often burn their solid waste in open pits near civilian populations, leading to their exposure to hazardous emissions (Bonds 2016). This is essentially exclusionary environmental decision-making, which, as discussed, is a fundamental basis for environmental injustice.

Most of the EJ literature for Oceania is oriented toward Australia; specifically, within the country's Indigenous communities. This can be predominately attributed to Australia's colonial past, which has led to the racial and economic marginalization of Native peoples on a systemic basis. The heavy presence of asbestos



mining in Australia's history is a strong testament to this dynamic. Due to a lack of economic power and environmental decision-making opportunities, Indigenous communities often housed asbestos mines in their communities, and were even specifically recruited to work in the mines (Webster 2005; Maloney 2014). This is a particularly pernicious environmental injustice due to asbestos' linkages with mesothelioma, a deadly form of lung cancer. The first Australian national study of industrial air pollution found that communities with greater proportions of Indigenous and economically-marginalized residents contain larger numbers of polluting sites and emit higher volumes of pollutants (Chakraborty and Green 2014). Native communities in Australia have also had to fight vigilantly to prevent the disproportionate placement of nuclear facilities in their communities (Maloney 2014); as such, the patterns of environmental injustice in Australia are quite clear.

In discussing Oceania, it is important to include environmental injustices that occur in the Carteret Islands, Cook Islands, Kiribati, Tokelau, the Federated States of Micronesia, and other oceanic regions as a result of climate change and sea level rise (Brindal 2007). It is estimated that in one hundred years' time, many of these nations will be inundated with ocean water and rendered uninhabitable to the Indigenous and socioeconomically marginalized communities that reside there. Despite the fact that regions such as these contribute the least to global emissions and rising sea levels, they disproportionately experience the effects of climate change and its harmful repercussions (Brindal 2007).

### 9.5.3 Green Criminology

As reviewed in the previous section, environmental injustices transcend international boundaries and influence various social groups around the world. This raises a question about what broader dynamics are at play that encourage the development of socioenvironmental disparities. Green criminology, which is a blend of criminology and EJ research, seeks to answer this question (Lynch and Stretesky 2014). Green crime is defined as actions or behaviors from corporations and individuals that have the potential to cause harm to the environment, humans, and non-human species (Lynch and Barrett 2018; Stretesky et al. 2014; Lynch and Stretesky 2013). Green criminology is an emerging field that studies green crime with a particular focus on understanding the economic drivers of environmental injustices. While this review focuses on negative impacts on humans (particularly those in disadvantaged communities), it is important to note that there are subfields within green criminology that analyze the negative impacts of industrial production on ecological systems, rates of extinction, and animal rights.

An important factor in green criminology that has delayed the field's progression has been the criminological tradition of narrowly defining crimes from an exclusively legal standpoint (Lynch and Barrett 2018; Lynch 1990). Crimes committed by corporations are often considered legal even if they significantly degrade the environment. Green criminology, in contrast, defines crime as the point at which the





environment and its inhabitants are negatively affected by industrial activities (Lynch and Barrett 2018). This definition is important when considering the influence that powerful corporations have on constructing the extent of legality, as they often encourage the separation of crime from the environment so as to absolve themselves of responsibility for their contributions to environmental degradation.

This has major implications to the environment, especially for marginalized communities who, as EJ literature teaches us, often bear the burdens of these crimes. Lynch and Barrett (2018) highlight this in citing evidence that petrochemical refineries in Black, Hispanic and low SES communities receive lesser punishments for environmental violations. Their privileged legal treatment allows refineries to focus their production processes exclusively on maximizing profit, despite the serious health ailments they cause in surrounding communities (Mohai et al. 2009). By fusing EJ and criminology, green criminology facilitates understanding of how minority populations' health and wellbeing are disproportionately impacted when environmental regulations are disregarded.

Green criminology also sheds light on how capitalism negatively influences corporate interests and industrial production in relation to the environment. The primary focus of capitalism is expansion and production of goods for accumulation. When accumulation of capital is at the epicenter of what markets deem necessary for success, green crime abounds. The globalization of capitalistic trade creates demands for profitability and productivity across world regions, and global capitalism's emphasis on profitability creates socioenvironmental predicaments (Lynch and Stretesky 2013). Green criminology places the reduction and elimination of environmental harm above all else as it seeks to challenge the structures from which many green crimes and environmental injustices derive.

For green criminologists, heavy exposure to toxic substances such as lead, mercury, and cadmium reflects a notable form of green crime; this due to the association of these substances with severe infirmities such as loss of brain matter, inhibition and disruption of cognitive development, and gliosis (i.e. scarring of the brain) (Lynch and Stretesky 2013). The Love Canal landfill disaster, widely considered one of the first documented cases of green crime, is an important example of this green criminology emphasis (Ruggiero and South 2010). In the 1940s, thousands of barrels of toxic chemical waste were dumped into an abandoned canal by the Hooker Chemical company in Niagara Falls, New York. The site was eventually covered in the 1950s, where it was then purchased by the Niagara Falls Board of Education. This occurred without full knowledge of the area's chemical history, meaning both homes and a school were built there, despite the risk this posed to residents. It was only when heavy rains brought these toxic chemicals to the surface that residents became aware of the environmental degradation of their community (Ruggiero and South 2010); injustices that were created by through corporate green crimes and later left for vulnerable populations to resolve. The understanding of such cases paves the way for environmental justice advocates to better recognize green crime and develop approaches to support affected communities.

In discussing inequitable chemical exposure, it is instructive to focus on lead specifically. Excessive lead exposure is associated with higher rates of aggravated



assault (Lersch and Hart 2014); as such, lead has a known capacity to influence behavior within exposed communities. This is of particular importance for racial and ethnic minorities, since they are disproportionately exposed (Stretesky 2003), and thus more susceptible to lead-induced behavioral changes (e.g., engagement in violent crime). Behavioral changes flowing from their unjust lead exposures may result in their being criminalized (i.e., stigmatized as hyper-violent), further reinforcing their social, economic, and environmental marginalization. Such a dynamic demonstrates how corporate disregard for the environment can translate into the deepening of inequitable social structures for racial and ethnic minorities. This example illustrates the complex effects that environmental injustice can have on communities.

Green criminology research points toward the influence of capitalism in shaping behavior in the corporate realm, which negatively impacts the health and wellness of racial/ethnic minority and lower SES populations. Without laws to govern corporate interests, organized green crime will continue to degrade both the health and wellness of minority communities. In some cases, this has led to community organizing and social activism, which has been central to EJ since its inception.

## 9.6 Taking Action

EJ is not simply an academic field; it is also a social movement for change. The Environmental Justice Movement (EJM) combines Civil Rights Movement concerns about inequality and racism with the Environmental Movement of the 1950s and 1960s (Bryant and Hockman 2005; Cole and Foster 2009). The EJM is largely comprised of grassroots organizations whose members belong to aggrieved parties facing environmental injustices that are occurring within their communities, and who are often working class, impoverished, and from minority backgrounds (Cable et al. 2005). These organizations seek to instill in their members the self-determination and power that groups and communities need in order to obtain access to resources, fairness, and justice (Agyemen et al. 2016). The EJM is not primarily concerned with achieving an equitable societal distribution of environmental risks and benefits; instead, the movement focuses on pursuing safe, healthy, and equitable living environments for all, in the present as well as in the future, through clean jobs, a sustainable economy, affordable housing, and social justice for diverse people (Cole and Foster 2009).

Many trace the start of the EJM to 1982 in Warren County, NC. This case involved distributional injustice wherein the predominantly black community of Afton was targeted with a landfill for polychlorinated biphenyl (PCB)-contaminated soil (created through illegal dumping) that threatened the health and quality of life for surrounding communities (Agyeman et al. 2016; Pulido 2017; Bryant and Hockman 2005). The aggrieved residents of Warren County, NC mobilized and protested the siting of the landfill, with support from key political and religious figures. The landfill was created in Warren County despite the strong resistance.



Consequently, the US federal government requested an analysis of the correlation between the siting of toxic waste facilities and the racial and sociodemographic makeup of surrounding communities (GAO 1983). Findings from this analysis of Warren County and three additional communities containing hazardous waste landfills showed that there were higher levels of black and low-income residents living in the same zip codes as the toxic dump sites. This study fueled the development of the EJM and subsequent distributive EJ research.

Since the EJM's inception, the movement has enhanced the definition of environment to include where people live, work, eat, play, and pray (as opposed to being limited to wilderness preservation) while prioritizing the environmental concerns of predominantly urban, poor, and racial/ethnic minority communities (Sicotte and Brulle 2017; Agyeman et al. 2016). The EJM has evolved since its initial focus on stopping the proliferation of incinerators and landfills. Today, the EJM includes various areas of concern like air pollution, clean water, food justice, indigenous rights, energy justice, just sustainability, climate justice, as well as place-making and sense of community (Agyeman et al. 2016; Sicotte and Brulle 2017; Pellow 2017). This expansion is reflected in the USEPA's (2019) current definition of EJ:

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

The reach of the EJM has spread from local and US national scales to global scales (Agyeman et al. 2016). Leaders of the EJM have united across the globe as a result of economic globalization and transnational movement of industrial pollution from the Global North to the Global South (Pellow and Brulle 2005; Brulle and Pellow 2005a, b). Also, global expansion of the EJM has involved the inclusion of social movement leaders in international conferences where they have been able to connect environmental struggles at the local scale to those of other people undergoing environmental injustice at the global scale (Bryant and Hockman 2005). Though international progress has been made by governing bodies and influential EJM organizations, there is still more work to be done in terms of increasing civil society's access to international environmental decision-making (Ciplet et al. 2015; Sicotte and Brulle 2017; Brulle and Essoka 2005).

### 9.6.1 Policy and Legislative Action

Central to the EJM is the demand for equal decision-making opportunities for all communities (Bell and Carrick 2017; Schlosberg 2009). As we have discussed, procedural injustices tied to the lack of political influence can often lead to



significant environmental injustices and poor health outcomes for marginalized communities. This can be corrected by recognizing and including marginalized people in decision-making that affects their health, communities, and livelihoods (Bell and Carrick 2017). In this context, procedural environmental justice involves marginalized populations “speaking for [themselves],” having a “seat at the table,” and demanding “equal, informed, respectful participation” in all environmental decision-making (Schlosberg 2007, p. 66; Bell and Carrick 2017; Cole and Foster 2009; Bryant and Hockman 2005).

The EJM has also pressured the federal government to create equitable environmental legislature. In 1986, for example, the Reagan administration passed the Emergency Planning and Community Right-to-Know Act (EPCRA). This requires industries to report on the storage, use, and release of hazardous chemicals to all levels of government, mainly in efforts to increase public health and access to critical information in times of emergency (USEPA 2017). The Clinton administration implemented the Executive Order (EO) 12898 in 1994 to encourage federal agencies to consider their disparate environmental impacts on minority and low-income communities. While this serves as an important moment in the EJM, it nonetheless exists as a recommended responsibility rather than a policy remedy; that is to say, there are no mechanisms inherent to EO 12898 that can facilitate the resolution of environmental injustices (Abel and Stephan 2017; Gordon and Harley 2005). Hundreds of complaints relating to disparate environmental impacts of federal actions are filed each year, but none have been successfully acted upon due to the lack of any binding requirements associated with EO 12898 (Foster 2017; Gordon and Harley 2005).

US federal priorities to achieve EJ are highly sensitive to administrative changes. During the Obama administration, EJ issues dramatically rose in importance within the EPA. This was influenced by Lisa Jackson’s appointment as EPA Administrator under President Obama. As the first female, black person ever appointed as EPA Administrator, Jackson advocated for legislation to limit carbon emissions and greenhouse gases, thereby attempting to address major sources of contemporary environmental inequities (Nealy 2009). During her term, the EPA itself aimed to integrate EJ into its political programs through efforts Plan EJ 2014, Plan EJ 2020, and various EPA funding grants; it also created environmental policy for federally recognized Indigenous tribes, an EJ screening and mapping tool for statistical and spatial analysis, and two guidance documents for regulatory actions (Abel and Stephan 2017). Many of those steps forward have been undone by the Trump administration, which, since 2017, has sought to deregulate polluting industries and increase fossil fuel production (Pulido et al. 2019). This transition has the potential to deepen US environmental injustices. As such, it is important for the EJM to continue advocating for procedural justice and thereby challenge the current administration.



## 9.7 Conclusion

In summary, environmental benefits and risks are inequitably distributed throughout our societies. Social position—including race, ethnicity, socioeconomic status, gender, and other aspects of identity—greatly influences the degree to which people are exposed to environmental hazards. When hazards become disproportionately concentrated in marginalized communities, it constitutes environmental injustice. Environmental injustices typically degrade the health and opportunities of those affected, reinforcing the marginalization that they experience. In no place is this pattern of environmental injustice better documented than the United States, where ample evidence indicates that racial and ethnic minorities, people of low socioeconomic status, immigrants, and other underrepresented communities have been inequitably environmentally burdened. As the scope of environmental justice research and practice has expanded, similar disparities have been discovered in Europe, Latin America, and Asia, among other world regions. Thus, the social processes and structures responsible for environmental injustices, such as institutional racism, green crime, and the prioritization of capital above human welfare, are by no means limited to the United States.

Within this context, the pursuit of environmental justice research is of utmost importance. All people, regardless of their social positioning, are entitled to safe environments, economic opportunities, and equitable access to the decision-making processes that affect their communities. Ongoing innovation in environmental justice research has the potential to inform social action to address environmental injustices on the ground. In the United States, for example, social actions to address environmental injustice should recognize recent findings that have documented environmental inequities within broad racial-ethnic groups (e.g., for foreign-born Hispanic Americans), and environmental injustices faced by previously ignored groups (e.g., Asian Americans, same-sex partners, or people with disabilities). Such advances could help inform new policies that are more specifically attuned to the varied injustices that affect diverse communities. In the near term, environmental justice analysts should examine how the Trump administration's environmentally- and socially-unconscionable actions have influenced environmental injustices in United States. The new field of green crime may provide particularly useful perspectives for such analyses.

To foster a global perspective, it will be important to expand the focus of environmental justice to additional world regions. While studies have been advanced in Latin America, Europe, and Asia, the global body of knowledge remains limited when compared to the United States. The underdevelopment of environmental justice research worldwide may stymie the creation of equitable, regionally-specific policies that could more effectively redress environmental injustices (Foster 2018; Abel 2008; O'Neill 2000). Developing regionally-specific policies that focus on the needs of particular communities, coupled with



mechanisms to incentivize environmental responsibility on behalf of corporations and states, might serve to promote environmental justice across the world. Given the current state of environmental governance, achieving environmental justice will necessitate deeper integration of research with political advocacy.

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