A Bridge to Challenging Environmental Inequality:
Intersectionality, Environmental Justice, and Disaster Vulnerability

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Abstract

This article explores the origins and expansions of environmental justice and disaster vulnerability literature. It proposes an intersectional framework as a tool for bridging these fields of research—fields that have moved forward primarily on parallel, yet rarely overlapping paths. The article explores both practical and theoretical issues that stem from the lack of communication between environmental justice and disaster vulnerability literatures, positing that disaster vulnerabilities exist first as issues of environmental justice. This is followed by a discussion of interlocking systems of oppression, which is critical for understanding the root of inequality in both disaster and environmental justice contexts. Focusing on the environmental oppression that underlies these contexts provides a potential basis to merge and improve these literatures at a critical time of increasing rates of environmental risks and disasters. By utilizing an intersectional framework to merge these areas of research, it is possible to develop a more holistic understanding of environmental harms and disaster vulnerabilities, while encouraging more just and equitable planning, preparedness, response, and recovery activities.

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Introduction

In her seminal article "A Bridge to Somewhere," Tierney (2012) utilizes the work of William Freudenburg to draw attention to the silos of disaster research and environmental sociology. She argues that Freudenburg's framing of the effects of technological and natural disasters as a consequence of broader "political, historical, and economic processes" should be used as a tool for dismantling these silos. Building on this argument, I explore the origins and expansions of environmental justice (EJ) and disaster vulnerability literature, and propose an intersectional framework as a tool for bridging these fields, which have moved forward on parallel yet rarely overlapping paths. The lack of synthesis between these two research areas can and should be bridged because, at their core, EJ and disaster vulnerability scholarship share a common goal: They seek to understand and ultimately reduce societal inequalities that lead to environmental inequalities. Both consider spatial and historical inequalities that in turn constrain access to resources and types of capital that keep certain populations in geographic and social spaces and places of oppression and thus, perpetually at risk and vulnerable.

Intersectionality theorizes that based on various identity characteristics, individuals may be oppressed and differentially impacted by a combination of interconnected societal structures (Collins 1993; Crenshaw 1991; May 2015). When we fail to account for how these interlocking systems work to oppress people, we omit people's complex experiences of oppression from discourse, theory, and study. As a result, we are not able to adequately address and redress those who have been subordinated. By utilizing an intersectional framework to merge disaster vulnerability and EJ, we can treat these factors as they exist, enmeshed, in this case, in the context of environmental inequality and oppression (May 2015). This holistic approach to environmental oppression can increase the likelihood of just and equitable planning, preparedness, response, and recovery activities.

I begin with a brief review of the respective literatures on EJ and disaster vulnerability. I then explore the practical and theoretical shortcomings of the separate framings of these literatures, positing that disaster vulnerabilities exist first as issues of EJ. Once I establish why and how this is problematic, I delve into a review of

intersectional theory, focusing on its suitability for bridging gaps between EJ and disaster vulnerability. I demonstrate how the foundational assumptions of each field are rooted in intersectional theory, and relate this to political, historical, and economic processes that have instituted and reinstituted similar dynamics of power and oppression in prominent EJ and disaster vulnerability cases in the United States. I close by advocating for an intersectional framework to: (1) synthesize the literature on EJ and social vulnerability in disasters; (2) re-conceptualize disaster vulnerability as an EJ issue; and (3) advance environmental practice, policy, and theory in the context of EJ and beyond.

Environmental Justice: Origins, Conceptualizations, and Advancements

In the United States, historical experiences of EJ abound.[1] Through Western "discovery," settlement, and expansion, Native Americans were plagued by the spread of disease, the degradation and taking of lands, forced migration, and destruction of food sources (Deloria Jr. and Lytle 1983; Isenburg 2000; Nabokov 1999). These historical arrangements and experiences of environmental injustices for Native communities continue to be woven into contemporary society. Yet it is only across the last two decades that we have seen them explored in a historical and contemporary context as accounts of environmental injustices (Hooks and Smith 2004; Hoover et al. 2012; Leonard III 1997; Lynch and Stretesky 2011; Vickery and Hunter 2016), particularly as it relates to uranium milling and mining (Brugge and Goble 2002; Charley et al. 2004; Dawson, Madsen, and Spykerman 1997; Johnston, Dawson, and Madsen 2010; Kuletz 1998; Pasternak 2011).

For instance, Brugge, deLemos, and Bui (2007) compare incidents of uranium release: the 1979 United Nuclear Corporation's Church Rock, New Mexico, uranium mill; the 1986 Sequoyah Fuels Corporation near Gore, Oklahoma; and the 1979 nuclear meltdown at Three Mile Island in Dauphin County, Pennsylvania. The

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[1] Throughout this paper, I focus primarily on the U.S. context of environmental justice and disaster vulnerability. This is in large part because of the historical roots of the environmental justice movement. However, a utility of an intersectional framework, among other things, is that it facilitates the analysis of environmental justice and disaster vulnerability across global contexts.

researchers suggest that Church Rock and Sequoyah received far less attention because they occurred in rural, low-income Native communities, whereas Three Mile Island was a wealthier, non-Native community. Furthermore, neither Church Rock nor Sequoyah led to major policy reform for better environmental protection, unlike Three Mile Island, which sparked nuclear regulatory changes (Brugge et al. 2007). Similar environmental issues occurring around this same time also developed initially outside of the EJ label, such anti-toxic activism in low-income U.S. communities, most notably in Love Canal, New York (Gibbs and Levine 1982). As such, from early on environmental activism manifested in silos that falsely separated environmental vulnerabilities in terms of class, race, and gender, and many were not labeled EJ issues.[2]

Although environmental inequalities persisted historically (Taylor 1997; 1998), environmental justice was not utilized as an organizing concept until the 1980s, when African American communities, black scholars, and the progressive United Church of Christ began to draw attention to environmental inequities experienced in black communities (Mohai, Pellow, and Roberts 2009; Szasz and Meuser 1997). Developing shortly after the civil rights movement, Everett Parker and Robert Bullard pursued environmental injustice narratives around civil rights and the experiences of African Americans in the southern United States, which were largely left out of mainstream environmental movements (generally white, male, wealthy; see Taylor 2000). The movement marks the first environmental discourse framed by people of color (Agyeman et al. 2016). The classic case of environmental racism that spurred this movement was North Carolina's decision to dump soil contaminated with polychlorinated biphenyl in Warren County where the largest proportion of African Americans in the state resided (Geiser and Waneck 1983; Mohai et al. 2009). As this issue garnered national attention, EJ activism and research began to develop in tandem. The foundations were laid by three key studies (Bullard 1983; United Church of Christ, Commission for Racial Justice 1987; United States General Account Office 1983) that

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[2] Krauss's (1993) exploration of discourse among white, Native American, and African American women active in toxic waste protests is an early exception to this.

provide further evidence of disproportionate exposure to toxins for low-income communities and communities of color (Bullard 1990). The findings from these studies demonstrate clear patterns of racial bias, which, while critical, are overshadowed by class-based findings of the study. The findings also gloss over nuanced experiences of disproportionate exposure patterns tied to other aspects of identity such as gender and age, both within and across race and class lines.

Given the movement's history, early investigations into issues of EJ were overwhelmingly focused on the unequal environmental burdens carried by the African American community in the United States. This was apparent in the progression of both research and activism, as sociologists Bryant and Mohai organized the first conference on Race and the Incidence of Environmental Hazards in 1990. One year later the delegates at the first National People of Color Environmental Leadership Summit drafted 17 principles of EJ, which are referenced widely today. Developed by a movement focused on contesting environmental racism, these principles supported the notion of equity across all socio-environmental relationships, opening up EJ for a more intersectional application. This expansion continued through the 1990s, as early definitions of EJ from Bullard (1994b) and the Environmental Protection Agency (EPA) focused on fairness and equity "for all" as related to their environment (Bullard 1994b; EPA 1998). A more inclusive and expansive definition of EJ has since developed, alluding to the ability for everyone to "feel safe" in the environments "where we live, work, and play" (Bullard in Schweizer 1999; Taylor 2000). This foundational approach depicts EJ as the equitable distribution of environmental benefits, risks, and hazards across society (Bullard 1994a; Lake 1996; Schlosberg 2004). The EJ field continues to grow, incorporating more inclusive definitions of EJ, more varied and nuanced concepts and frameworks, and more extensive methodologies. Many of these advances are not incongruent with an intersectional framework for understanding experiences of environmental inequalities.

After an early focus on toxic waste sites and locally unwanted land uses (Freudenburg 1993), today's issues of EJ are more encompassing, examining a wide variety of environmental factors and their impact on individuals across a broader array of social

dimensions (Table 1). EJ research has also developed critically and spatially, analyzing rural dimensions of environmental disparities (Malin 2015; Malin and DeMaster 2016; Pellow 2016; Roberts and Toffolon-Weiss 2001), the concept of community as an organizing principle for environmental controversies and injustices (Gunter and Kroll-Smith 2006), and utilizing EJ to understand environmental inequities transnationally (Faber 2008; Mohai et al. 2009). EJ's advancement across these spatial dimensions creates an opening in the literature for a more contextual, intersectional understanding of the distribution of environmental goods and bads, such as sustainability, climate impacts, natural resource extraction, and waste and e-waste disposal (Agyeman et al. 2016; Anand 2004; Carruthers 2008; Jamieson 2001; Pellow 2007; Schlosburg 2004; Smith, Sonnenfeld, and Pellow 2006).

Table 1. The Social and Environmental Dimensions of Recent Environmental Justice Research as Identified by Walker 2012

Social Dimensions	Environmental Dimensions	
Race	Air pollution	Greenspace
Ethnicity	Accidental hazardous releases	Outdoor recreation
Class	Waste landfills	Mineral extraction
Income	Waste incinerators	Hog industry
Deprivation	Contaminated land	Emissions trading
Gender	Brownfield land	Oil drilling and extraction
Single-parent families	Urban dereliction	Access to healthy food
Households in social housing	Lead in paint and pipes	Fuel poverty
Older people	Flooding	Wind farms
Children	Noise	Nuclear power stations
Indigenous peoples	Drinking water quality	Climate change
Disability	River water quality	Trade agreements
Deafness	Transport	Alcohol retail outlets
Special needs	Forest fires	Biodiversity and genetic resources
Future generations	Whaling	Genomics
	Wildlife reserves	Land reform
	Agriculture	

Source: Walker 2012

90

Intersectional experiences are indeed coming to light across different social and environmental dimensions of EJ, such as pesticide exposure in rural minority communities (Harrison 2011). Other authors are exploring EJ from the perspectives of gender, sexuality, and activism (Newman et al. 2004). Kurtz (2007) examines EJ and gender in Louisiana, and a handful of age-related analyses explore EJ in the context of children and the elderly (Cutter 1995; Evans and Marcynyszyn 2004; Landrigan, Rauh, and Galvez 2010; Stephens 1996). Methodologically speaking, the majority of research has focused on developing EJ through single variable analyses.3 When analyses do consider multiple outcomes as opposed to focusing on a single variable, they typically focus solely on race and class, analyze them as separate entities, and at times pit them against one another (Mohai et al. 2009), which Bullard (1993) identified early on as the "race versus class trap." While we are learning more about interlocking systems of oppression, we must continue to advance EJ methodologies that are adequate for this theoretical approach.

Although EJ efforts may recognize the disparate experiences of domination and subordination, the literature has largely failed to apply an intersectional lens to evaluate interlocking systems of oppression at work in the multitude of EJ issues across the United States and beyond. That is, the field lacks a strong theoretical framework for exploring the intersectional analysis that is beginning to gain ground in the literature. Theoretical advancements in the field hold promise for the development of intersectional EJ. In particular, the application of critical theory in EJ research has greatly advanced the field, paving the way for intersectional exploration (Agyeman et al. 2016; Faber 2008; Harrison 2014; Malin 2015; Malin and DeMaster 2016; Schlosberg 2007). Faber (2008), for example, recently proposed a more radical approach to defining EJ, envisioning it as the rebuilding of our political-economic system to drastically reduce society's environmental bads.4 Practically, this

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3 For a brief review of methodological advancement, see Agyeman et al. 2016.
4 Environmental bads are broadly understood as things that endanger or are bad for the environment (Wehr 2011). In the EJ literature, environmental bads often refers to the "uneven sharing of environmental burdens," which result from human action (Wehr 2011:145). Examples include: air pollution, water pollution, garbage

definition opens up the space for a more intersectional understanding and framing of EJ issues explicitly as issues of power and oppression.

I argue that to accurately capture and represent the complexity of EJ issues in the globalized 21st century, it is necessary to develop the incorporation of nuanced, critical approaches to EJ issues through the application of an intersectional framework as an organizing principle for understanding experiences of environmental oppression. From this framework, an advancement of EJ methodology that can better account for intersecting systems of oppression and how that oppression manifests within and across multiple identities, becomes possible.

Disaster Vulnerability: Origins, Conceptualizations, and Advancements

Unlike EJ research, disaster vulnerability literature did not emerge simultaneously with a historical, U.S.–based social movement. Instead, disaster vulnerability as an issue of social vulnerability developed in response to the traditional disaster research model. The traditional approach to hazards explores disasters and their impacts as a geophysical phenomenon, wherein their destruction is a result of forces external to the human world (Fordham et al. 2013). From this dominant paradigm, the concept of disaster vulnerability focuses on the geographic position of humans and society and the spatial distribution of people in relation to a hazard. As such, vulnerability was viewed as primarily influenced by the characteristics of the disaster event, such as its "magnitude, duration, impact, frequency, and rapidity of onset" (Cutter 2006:74). From this perspective, there is little acknowledgement of the relationship between social organization and impacts of that disaster on the society. This approach, as well as the more contemporary "vulnerability as hazard of place" (Blaikie and Brookfield 1987; Cutter 2006; Degg 1993; Longhurst 1995), are problematic as they fail to acknowledge the extent to which biophysical risk, distribution of hazards, and distribution of people in hazardous areas and events

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dump sites, toxic industrial facility sites, e-waste, oil spills, and food contamination (Faber 1998; Hobson 2004; Wehr 2011).

are also driven and shaped by the same underlying social inequalities that influence social vulnerability in disasters.

A social understanding of disaster impacts and vulnerability began to emerge as early as 1969, as Barton's *Communities in Disaster* demonstrates how disasters have the capacity to reveal a society's embedded problems. O'Keefe, Westgate, and Wisner (1976) assert that we should take the naturalness out of natural disasters and recognize that disasters are more a product of socio-economic than natural factors. Hewitt further develops this approach, suggesting that a focus on hazards as "an occasion of natural extremes, and upon the loss, crisis, relief and rehabilitation in disasters, can mislead us as to the decisive human ingredients of natural hazards" (1983:ix). With a focus on the arrangement of the social world, disaster vulnerability can be explored as a social construct rooted in historical social processes (Cutter 2006). That is, disaster vulnerability can be seen as a result of overarching, preexisting social conditions that exist independently from the disaster event itself. Therefore, any time we discuss vulnerability in relation to human society, it must first and foremost be conceptualized as social vulnerability (Blaikie et al. 2014; Hartman and Squires 2006; Hewitt 1983; O'Keefe et al. 1976). Disaster impacts and responses, then, can be measured "by threats of lifelines or infrastructure to support basic needs, special needs populations, poverty/wealth indicators, gender, race, and so forth" (Cutter 2006:75). From this perspective, differential disaster impacts "are largely a function of the power relations (class, age, gender and ethnicity among others) operative in every society" (Bankoff 2006).

Disparity in vulnerability has been demonstrated across all phases of disaster, along lines of social class, race, ethnicity, gender, and age (Bolin 1982; Bolin and Bolton 1986; Bolin and Klenow 1983; Fordham et al. 2013; Glass et al. 1980; Perry, Hawkins, and Neal 1983). In a systematic literature review of two decades' worth of research on poverty and disasters, Fothergill and Peek (2004) explore how socioeconomic status differentially influences individuals' perceptions and experiences of a disaster in terms of risk perception, preparedness, response, impacts, recovery, and reconstruction. Racial and ethnic minorities experience disproportionate disaster losses (Dash 2013; Fothergill, Maestas, and Darlington 1999), frequently experience higher mortality rates

(Amarasiri de Silva 2009; Bolin and Bolton 1986; Klinenberg 2002; Liang et al. 2001), and tend to lack political power and cultural capital to secure resources in the recovery process (Browne 2015; Dash 2013). In fact, African American communities have been so impacted by disaster in the United States that Rivera and Miller posit that "major natural environmental disasters, when situated in historical context as a part of the social, political, geographical, and economic landscape, are vital in the understanding of the African American experience" (2007:502).

Research on gender has revealed that it is also a critical component in understanding disaster vulnerability (Enarson 2000; Enarson, Fothergill, and Peek 2007; Enarson and Chakrabarti 2009; Enarson and Morrow 1997; Enarson and Morrow 1998; Enarson and Pease 2016; Fothergill 1996; Morrow and Phillips 1999; Tobin-Gurley and Enarson 2013). For example, women in the developing world are more likely to die during a disaster because of "discriminatory practices, women's location in a disaster, and childcare responsibilities" (Fothergill 1996:17; see also Anderson 1994; Tobin-Gurley and Enarson 2013). Yet in the United Sates, morbidity and mortality rates by gender vary depending on the type and location of a disaster (Fothergill 1996). These examples demonstrate the importance of culture and context when evaluating disaster vulnerability (Enarson and Meyreles 2004), and further illustrate the critical role of an intersectional framework to understand how interlocking oppressive systems manifest in environmental inequalities such as disaster impacts.

Age-based vulnerability is also a quickly growing area of disaster research. Peek (2013) notes the importance of age in determining vulnerability, especially for the very young and very old. Indeed, being older than 60 was the "single most important factor in determining who died in Hurricane Katrina" (Peek 2013:172). Peek (2008) also writes about the vulnerability of children, especially with regard to the distinct psychological, physical, and educational risks they face in disaster (see also Fothergill and Peek 2015). Recent scrutiny of preparedness also considers barriers for persons with disabilities, encouraging municipalities to develop inclusive disaster plans that accommodate access and functional needs, such as multi-lingual warning efforts and accessible shelters (Hansen et al. 2012). Like the EJ literature,

the disaster vulnerability literature has broadened to address vulnerability across new social and environmental dimensions over time.

Frequently disaster researchers suggest that social dimensions—race, gender, class, and age—and their influence on vulnerability are not separable from one another. Although multidimensional factors are sometimes used to measure vulnerability (Belkhir and Charlemaine 2007; Bolin and Klenow 1988; Childers 1999; Elliott and Pais 2006; David and Enarson 2012; Fothergill 2004; Fussell, Sastry, and VanLandingham 2010; Fordham 1999; Hartman and Squires 2006; Peacock, Morrow, and Gladwin 1997; Sharkey 2007), more often than not the indicators used are discrete variables. There remains a less systemic analysis of the interplay of interlocking systems of oppression on how individuals and their collective identity shapes disaster vulnerability and resilience. This lack of ability to explore the interwoven systems of oppression despite their clear existence in experiences of disaster vulnerability is precisely why the application of intersectional theory and methodology to the study of disaster vulnerability is critical for moving the field forward.

Furthermore, the power dynamics of social systems and processes that constitute disaster vulnerability are not isolated, nor are they ahistorical. In addition to space being a critical component, historical power arrangements are also integral for understanding which populations are more vulnerable to disaster risks, and for understanding how and why these populations disproportionately experience disaster vulnerability. As Dash notes, "those in the majority have the power to live on lands that are at lesser physical risk" (2013:123). Conversely, low-income developments are often placed in spaces that have high risk of hazards in terms of natural disasters, technological disasters, and exposure to hazardous wastes, materials, and toxins. This suggests that as we continue to expand disaster vulnerability studies across social and environmental dimensions, the spatial and temporal contexts of societal power relations that shape disaster vulnerability must be accounted for and redressed in early stages of community planning. Intersectionality as a framework is critical for evaluating and dismantling the unjust planning processes that ultimately contribute to the creation and sustainment of environmental inequalities.

Disaster Vulnerability as Environmental Justice? Toward a Synthesis of the Literature

In conceptualizing disaster vulnerability, we must focus first on the underlying societal actions that create social hierarchies and shape the relations between individuals, communities, societies, and the natural world. In doing so, it is clear that the impacts of natural disasters, technological disasters, and hazardous exposures are rooted in the same problem—the interlocking systems of oppression that determine differential levels of risk and vulnerability to environmental harms. Thus, disaster vulnerability can be encompassed under the EJ literature, which is best served theoretically through the lens of intersectionality.

Both the disaster vulnerability and EJ literature offer discussions of power and influence of historical and spatial conditions (Cutter 2006; Fordham 2013; Freudenburg et al. 2009; Pellow 2000; Pellow and Brulle 2005; Tierney 2012). EJ and disaster research make it clear that some community members are more equipped with the resources, political clout, and social and cultural capital to resist exposure to environmental harm (Brady, Verba, and Schlozman 1995; Browne 2015; Morrison and Dunlap 1986; Parker and McDonough 1999). Furthermore, both sets of literatures continue to incorporate critical theories into the development of research in their respective fields (Faber 2008; Harrison 2014; Luft and Griffin 2008; Malin 2015; Malin and DeMaster 2016; Schlosberg 2009; Schlosberg 2013; Weber and Peek 2012). As a recent example, Faber (2008) has explored environmental injustices via a "polluter-industrial complex" framework, critically questioning capitalism, neoliberalism, and the colonization of the state, and discussing the implications for issues of EJ worldwide. In disaster research, critical sociological approaches are being deployed to understand the way social impacts of disasters are pre-engineered and often driven by growth prior to a disaster (Freudenburg et al. 2009). The post-disaster context is also being critically analyzed, as the rebuilding process can become an opportunity for profit and for the re-envisioning of community growth and development for governments and corporations (Klein 2007; Loewenstein 2015). Despite raising similar criticisms of the capitalist system, EJ and disaster vulnerability rarely overlap. There are some exceptions, but the overlaps that do occur are infrequent and piecemeal (Cutter

2006; Dash 2013; Freudenburg et al. 2009; Mizelle Jr. 2014; Morse 2009; Walker 2012). A systematic joining of the literatures is necessary.

As I have suggested this lack of synthesis is problematic as EJ and disaster vulnerability both attend primarily to societal inequalities which manifest as environmental inequalities, and the way these environmental inequalities are reproduced across time and space. There are obvious detriments to the advancement of the literature if we continue to pursue these as separate social justice issues, but there are also practical problems when we do not preemptively conceptualize and address the roots of environmental oppression at their core. A glaring example from recent headlines is the case of Flint, Michigan. After a government decision to switch water sources in a low-income community of color, the community's water system became contaminated with lead. Instead of addressing the issue, government officials at multiple levels were slow to expose and ultimately remediate the situation, with some employees even attempting to cover up the error—a clear situation of environmental injustice and a technological disaster (Bullard 2016; Ryder 2016). However, in an appeal to the federal government, Michigan Governor Rick Snyder's request for a disaster declaration in Flint was denied because of the crisis being "man-made" rather than natural, and thus the disaster did not fit declaration criteria as it was not an explosion, fire, or flood (Burke 2016; Hicks 2016). Without the disaster declaration, Governor Snyder's requests to the Federal Emergency Management Agency meant significantly less money for recovery, as well as the agency's denial of his requests for several assistance programs, most notably the Individuals and Households Program, and the Hazard Mitigation Grant Program (Burke 2016).

By continuing to qualify what types of environmental justice events count as disasters, the federal government is failing to effectively serve communities who have suffered environmental injustices. Hence, environmental and disaster policy and practice, as well as urban and climate mitigation, could benefit from a merging of the conceptualizations of EJ and disaster vulnerability. This would allow for just planning—the notion that the planning process must consider the equitable distribution of environmental risks and benefits and work to minimize potential environmental risks for all,

prior to the onset of development. Taylor (2014) has highlighted planning oversights and injustices that have led to EJ issues, and the discipline has been critiqued for being more reactive than proactive (Agyeman et al. 2016). An intersectional lens allows for an evaluation of the practices and policies that lead to these situations, providing the discourse and practice an avenue to be proactive against potential EJ issues by critically analyzing and changing the planning processes through which issues of EJ develop.

Intersectionality and Environmental Inequalities: Accounting for Multiple Aspects of Identity and Oppression in EJ and Disaster Vulnerability Research

Intersectionality theorizes that "interlocking structures of oppression" work simultaneously and impact people differently based on several facets of their identity, most notably race, gender, and class (Collins 1993; Crenshaw 1991). The earliest conceptualization of intersectionality is frequently attributed to Kimberle Crenshaw (1991), and her work with victims of domestic violence. Crenshaw (1991) explores the experiences of black women who face oppression as a result of both their gender and race in a social system dominated by white men. Given the relationship between these systems of oppression, use of a single categorical axis ignores the way black women are multiply burdened. This means that the complex experiences of people at the intersection of multiple aspects of their identity tend to be absent from discourse, theory, and study. This lack of critical focus can create a situation where, in order to make progress against racism, a black woman may have to set aside her feminism, or conversely, to make progress against sexism, set aside her racial identity.

Crenshaw elaborates, "Because the intersectional experience is greater than the sum of racism and sexism, any analysis that does not take intersectionality into account cannot sufficiently address the particular manner in which black women are subordinated" (1991:140). Though intersectional theory is rooted in the experiences of black women, intersectional systems of oppression are based more broadly in race, ethnicity, gender, age, nationality, disability, geographic location, legal status, and other aspects of collective identity. Crenshaw (1991) discusses the added burden for

women in U.S. domestic violence shelters that do not speak English, or have not obtained legal citizenship, or both.

Systemic discrimination interacts with intersectional identities to make certain populations and communities more vulnerable to environmental risk and harm (Daum 2015). Currently, the absence of intersectional analyses in EJ and disaster vulnerability research masks the extent of environmental oppression, risk, and vulnerability for the most environmentally marginalized populations and communities. It also obfuscates the myriad ways in which intersectionally privileged populations benefit from socio-environmental practices over time.

The irony is that there is clear allusion to interlocking systems of oppression and the influences they have on incidents of EJ and levels of disaster vulnerability, but there is no regular application of intersectionality as a critical framework in either approach (for exceptions, see Luft and Griffin 2008; Weber 2001; Weber and Hilfinger Messias 2012; Weber and Peek 2012). The literature on social vulnerabilities to disasters is rooted in an understanding of social stratification that underpins intersectional literature. Fordham et al. contend that:

> Systems of stratification shape us, our life chances and choices, and are critical organizing principles of all societies. Opportunities and rewards are explicit and implicitly available to some and withheld from others based on these groupings. Further, these groupings are often used as justification for doing so. Simply put, we do not all have the same opportunities, rewards, and barriers, which facilitates or constrains our ability to move around within these systems and improve our life chances…These systems of stratification are intrinsically connected to opportunity, inequality, and oppression… [These opportunities and barriers result in]…unequal access to goods and resources, oppression and inequality, prejudice, and discrimination. Therefore, these systems of stratification are intrinsically connected to social vulnerability in any given society. And, in disaster

99

situations, these systems of stratification and vulnerabilities are often exposed in many ways (2013:16).

Fordham and colleagues suggest taking a critical, social vulnerabilities approach, but stop short of pursuing an intersectional lens. Boyce (2000) suggests that historically disempowered populations face barriers to risk reduction as risk is embedded in social processes, policies, and institutions. In the EJ literature, Mohai et al. are some of the only authors to explicitly discuss intersectionality as relevant, but even here it is mentioned in passing as a way to refute market dynamic explanations of EJ issues:

> Market forces and class inequalities are never race neutral, revealing what critical race theorists have termed intersectionality, which is the fact that race, class, gender, and other social categories are always linked in the experiences of individuals and groups. Despite the difficulties of sorting out and pinning down the factors that may result in racial and socioeconomic disparities in the distribution of environmental hazards, the above explanations, at the very least, help identify the range of possible factors that may account for disparate outcomes (2009:416).

From an intersectional perspective, where factors are enmeshed we can develop a richer understanding of the complexity of differential impacts of environmental harms. This is useful when examining the nuanced intersections of oppression in EJ or disaster events, such as when a disaster destroys domestic violence shelters, leaving disadvantaged women to return to abusive homes (Fordham et al. 2013); when we explore how poor black men and women experience the impacts of Hurricane Katrina differently; or when we frame Flint, Michigan, as an intergenerational EJ issue wherein children of a low-income community were most impacted by lead poisoning. Examining the multiplicity of social variables in the context of a particular disaster or EJ event provides a window for viewing how

multiple social identities and subsequent social location influences experiences of environmental oppression and inequality.

Intersectionality is also a tool for challenging dominance and achieving social justice. It is "a form of resistant knowledge developed to unsettle conventional mindsets, challenge oppressive power, think through the full architecture of structural inequalities and asymmetrical life opportunities, and seek a more just world" (May 2015:xi). Yet in order to do so effectively, May (2015) suggests it is necessary to form a "politics of coalition"—that is, solidarity that enables successful contestation of dominant logic across different systems of domination. Through intersectionality, it is possible to illuminate patterns of dominant logic across contexts that are seemingly unrelated. That is what this article has attempted to accomplish. Specifically, I argue that by utilizing intersectionality as a theoretical approach, it is possible to more fully understand—and hence reveal—the extent to which issues of EJ and disaster vulnerability are rooted in the same socio-environmental systems of oppression that manifest differently based on individual and community identity, and simultaneously limit capacity, agency, and resources across space and time. By identifying and placing environmental oppression at the forefront of our analyses, we can more clearly see how to dismantle it.

Conclusion

Fordham et al. suggest that "the social vulnerability paradigm is not sufficient by itself to plan for disasters and must be understood as part of a larger, broader view that includes understanding geophysical hazards and technological solutions" (2013:17). Speaking on EJ, Bullard shared similar sentiments: "[EJ] basically says that the environment is everything: where we live, work, play, go to school, as well as the physical and natural world. And so we can't separate the physical environment from the cultural environment. We have to talk about making sure that justice is integrated throughout all of the stuff that we do" (Schweizer 1999).

In this article, I aimed to demonstrate the extent to which both of these perspectives are true. I have posited that, given the shared concerns of EJ and disaster vulnerability literature, the two fields of research should be considered inseparable. Furthermore, as disaster vulnerabilities are inherently related to unequal burdens of exposure

to environmental harms, I suggest that disaster vulnerabilities exist as EJ issues, prior to the onset of any hazard event. Finally, I propose that both literatures are significantly lacking in their ability to discuss environmental injustice, harm, and disaster vulnerability as it relates to multidimensional identity factors for individuals, communities, and broader populations—despite a plethora of research that indicates that these connections are intertwined and integral to understanding environmental inequalities.

Moving forward, I advocate that the literatures be coalesced under an intersectional environmental framework. Such a framework will better address the nuances of experiences of environmental oppression, injustice, harm, and vulnerability; serve as an organizing ground for proactively challenging the dominant status quo; and inform policies that can more effectively reduce environmental inequalities. These are essential for achieving equity and justice in socio-environmental relations, a goal that becomes increasingly critical in the face of the consequences of climate change, and the push for a future that realizes climate justice, just sustainability, and just planning.

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109

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