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Introducing Environmental Justices

In the past forty years, the environmental movement has radically transformed how we think about the interrelationships between social and ecological systems. Rachel Carson's *Silent Spring*, published in 1962, was a crucial moment in the rise of environmental politics, putting a trenchant and scientific critique of the disastrous impacts of "modern" chemical technologies into engaging prose that resonated with the general public. The environmental justice (EJ) movement that has emerged and grown since the 1980s has pushed this critique further, arguing that meaningfully confronting environmental problems requires attention to the ways that they shape the lives of some social groups more than others. Levying its charge at the state, industry, and the mainstream environmental movement itself, the EJ movement has shown that mainstream environmental politics have typically ignored the fact that the world's most vulnerable and marginalized groups bear a disproportionate share of environmental burdens. EJ activists and scholars explain that various forms of political *injustice*—corporate profit seeking and malfeasance, the state's failure to adequately represent or protect the needs of marginalized social groups, and other forms of "raw power" that have "pitted the powerless against the powerful all over the world"—have forced poor people and people of color to bear a disproportionate share of environmental harms.¹ In other words, it is by disregarding justice that powerful actors are able to shift environmental burdens to the people who are least able to contest them.² Accordingly, EJ activists and scholars advocate bringing justice into environmental politics.³

My aim in this book is to both uphold and amend this EJ argument. This book pivots around political conflict over pesticide drift in California—a case that illustrates in sharp, present detail how the workings of "raw power" shift the burden of pesticide pollution to the bodies of California's most marginalized and vulnerable residents. That said, I also

challenge the claim that environmental inequalities exist because mainstream (i.e., non-EJ) environmental politics are devoid of justice. I contend instead that environmental inequalities emerge from cruelty and malfeasance, but also from the ways in which many well-intentioned actors are engaging in efforts to make California agriculture more environmentally sustainable. I use the case study of pesticide drift to demonstrate that contemporary environmental politics are shaped in part by particular notions of justice. I specify and explain these notions later in this chapter, and throughout the book I identify the various roles that these theories play in environmental politics—in some instances expressly constituting the moral charge for particular programs, in other cases co-opted strategically and incompletely to discursively legitimize other programs, and in still other cases invoked unintentionally. I describe why certain theories of justice and the practices they endorse in mainstream environmental politics do little to effectively address problems like pesticide drift, and I show how pesticide drift activists, like the broader EJ movement, push for a set of solutions based in a different notion of justice. The tension between the EJ movement and mainstream environmental politics, in this light, also can be understood as a clash between competing conceptions of justice. In order to fully appreciate and effectively apply the insights of the EJ movement, we must critically interrogate the conceptions of justice that increasingly pervade mainstream environmental politics today (and to which the EJ movement itself is reacting): how they work, why they are problematic, and why they seem reasonable to so many people.

The Case: Political Conflict over Pesticide Drift in California Agriculture

Without a doubt, pesticide illness constitutes one of the most widespread environmental problems today. The United Nations Environment Program estimates that one to five million pesticide poisonings occur every year worldwide, and twenty thousand of those are fatal.⁴ What makes these statistics especially chilling is the fact that they represent only the tip of the iceberg, since they do not account for pesticide-related, delayed-onset diseases, nor the fact that most pesticide exposures are neither recognized, treated, nor reported.⁵ As scientific evidence amasses about the uncontrollability of pesticides as well as the issues around their long-range transport, people around the world collectively organize to fight against the most highly toxic pesticides and the ways in which they pollute water, air, and food. Pesticide *drift* is the airborne movement of agricultural pesticides into residential areas, schools, and other spaces, and is now a key target

of activists' anger, because the wayward movement of pesticides, often far from where they are applied, reveals just how pervasive and under-recognized pesticide exposures actually are. In recent years, public concern about pesticide drift has generated activist campaigns throughout the world, in both the global North and South. In the United States, activist groups all over the country—including Hawaii, Alaska, Maine, the Southeast, the Midwest, California, Colorado, and the Pacific Northwest—are carrying out this work.

California provides an illuminating window into the problem of pesticide drift and its potential solutions. In many ways, California is similar to agriculture-intensive regions throughout the world. California agricultural pesticide use rates are high, pesticide drift has been well documented there, and human exposures to pesticide drift are a regular feature of its agricultural landscape. Though California agriculture is famous for its “industrial” character—highly mechanized and capital intensive—it is also exceptionally labor intensive and interfaces intimately with residential neighborhoods (include long-standing farm towns, new suburban developments, and nearby urban centers).

What makes California different and thus an unusually interesting case study is the fact that many different actors—from industry, the state, and activist groups—have struggled for years to bring agricultural pesticide problems like drift under control. California is in many ways the vanguard of environmental protections, as its long history of environmental activism, famous national parks and other protected lands, and EJ policies and programs exceed those of most other states in the nation. These progressive environmental politics extend into its agricultural sector, where industry innovations, regulatory leadership, and vibrant agrifood activism set it apart from other states in terms of environmental sustainability efforts. Although California agriculture, a \$38 billion powerhouse, has long been recognized as the epitome of modern, industrial agricultural production that pivots around highly toxic chemical pesticides, a wide variety of actors in the agricultural industry have invested in innovative efforts to make California agriculture more environmentally sustainable.⁶ California's pesticide regulatory apparatus similarly contributes to such sustainability developments. The California Department of Pesticide Regulation (DPR) and the state's County Agriculture Commissioner offices together comprise the largest pesticide regulatory apparatus in the nation, employing hundreds of scientists, managers, and other staff across the state. Additionally, the state's pesticide laws and regulations exceed federal standards in countless ways, support many innovative programs designed

to reduce pesticide risks, and often set the bar for federal environmental policy changes. Environmental sustainability efforts by the agricultural industry and regulatory agencies have developed over time in tandem with tremendous public interest in environmental issues along with a dynamic collection of environmental, labor, and food activists who keep agri-environmental issues on the public and political agendas.⁷ Throughout this book, I refer to such activism as the “alternative agrifood movement”; pesticide drift activism overlaps with it, but also differs in several notable ways, as I elaborate in chapter 5.

However, despite the “greening” of food and agriculture in California, large-scale pesticide drift incidents have occurred with disturbing regularity in recent years, frightening and sickening thousands of people near agricultural fields. Therefore, California is the perfect case for asking two important questions: Why does this environmental problem persist despite considerable industry innovation, regulatory action, and public activism? How can such efforts be reformed to better address this and other pressing environmental problems?

As it turns out, it is rather difficult to quantify just how pressing an environmental problem pesticide drift is. Official regulatory data indicate that in an average year, several hundred Californians are made ill by agricultural pesticide drift. Regulatory officials emphasize that these incidents are relatively few in number and assert that they are generally caused by applicator error. Starting in 1999, though, a series of remarkably large-scale pesticide drift incidents in California pushed the issue into the spotlight unlike ever before. Crucially, these incidents helped to mobilize political activists who cast doubt on regulators’ claims about the scope of the problem.

An incident in Earlimart in 1999 garnered particular attention. Throughout the course of the evening of November 13, at least 170 residents of the small, agricultural community of Earlimart repeatedly experienced frightening and inexplicable acute illness, including vomiting, impaired breathing, dizziness, and burning eyes and lungs. Emergency crews responding to the scene did not speak Spanish and thus could not effectively communicate with many of the residents. Moreover, they could not identify the cause of the illness and were unsure of how to advise the victims, telling some to stay indoors while directing others to leave the vicinity. Eventually, later that night, emergency crews evacuated some of the most ill residents to a nearby middle school, stripped them in front of their neighbors and television crews, and sprayed them repeatedly with fire hoses. A subsequent investigation revealed that a poisonous cloud

of a soil fumigant called metam sodium, a known carcinogen as well as reproductive and developmental toxicant, had volatilized more quickly than anticipated from an agricultural field one quarter of a mile away, drifted into the town, and poisoned the residents. Victims were left with fear, lingering illnesses, and medical bills they could not afford to pay. The Earlimart incident helped to expose the inadequate communication between county agriculture commissioners and emergency responders, prompted an investigation by statewide political and regulatory officials, and inspired numerous residents to form a community-based organization (El Comite para el Bienestar de Earlimart) to confront pesticide drift and other problems in their neighborhood.⁸

As much as the Earlimart incident revealed the dangerously unruly nature of agricultural pesticides and emergency responders' numerous failings, subsequent situations showed that Earlimart was not an anomaly but rather part of a regular trend (see table 1.1 below).⁹ In November 2000, at least thirty-five elementary school children and several teachers in Ventura County were taken sick after a cloud of chlorpyrifos drifted into the school grounds from a nearby lemon orchard. Chlorpyrifos is a neurotoxic organophosphate insecticide and has been classified as a suspected endocrine disruptor and possible developmental or reproductive toxicant. Unfolding in a largely white, upper-middle-class coastal community, the Ventura incident illustrated that all residents living near agricultural fields are at risk of exposure to pesticide drift.¹⁰

Subsequent large-scale incidents continued to push pesticide drift into the spotlight. In July 2002, a wayward cloud of metam sodium drifted into Arvin, a farmworking community in the Central Valley on the outskirts of Bakersfield. Initially, the news reported that only one person had been made ill from exposure to the pesticide drift. Hearing rumors that made them doubt the validity of that number, a group of concerned residents from nearby towns and representatives from a regional EJ organization walked door to door to interview neighbors and collect illness data. Their efforts uncovered a pesticide drift event startling for both its size and relative invisibility. They found that at least 273 people living and working in Arvin had likely been poisoned that day, with one woman hospitalized for a week.¹¹ The following statement from one of those volunteers, Teresa DeAnda (who herself had been poisoned in the Earlimart incident in 1999), conveys the fear and frustration that many residents experienced:

In 2002, when Arvin happened, we went up there and the news report said that only one person had been taken to the hospital. And we didn't believe—I didn't believe that. And I kept telling the county ag commissioner. He wouldn't go. He

Table 1.1
Selected Major Pesticide Drift Incidents in California, 1998–2007

Date	County	Number of people affected	Pesticide
1998	Monterey	12 workers	Diazinon
1998	Merced	12 workers	Chlorpyrifos
1999	Madera	10 children and bus driver	Chlorpyrifos
November 1999	Tulare (Earlimart)	170 residents	Metam sodium
June 2000	Tulare	24 workers	Chlorpyrifos
November 2000	Ventura	35 children and teachers	Chlorpyrifos
June 2002	Kern (Arvin)	138 workers	Metam sodium
June 2002	Kern (Arvin)	273 workers and residents	Metam sodium
October 2003	Kern (Lamont)	163 residents and 3 workers	Chloropicrin
May 2004	Kern (Arvin)	122 workers	Methamidophos
2004	Monterey	11 workers	Diazinon and mefenoxam
May 2005	Kern (Arvin)	27 workers and 6 emergency crew	Cyfluthrin and spinosad
October 2005	Monterey (Salinas)	324 residents	Chloropicrin
August 2005	Kern	42 workers	Metam sodium
September 2006	Sacramento	48 workers	Disulfoton
2006	Merced	10 residents	Methyl bromide and chloropicrin
2006	San Bernadino	51 residents and workers	Chloropicrin
2007	Monterey	31 residents and workers	Methyl bromide + chloropicrin
July 2007	Tulare	28 workers	Chlorpyrifos

said, “What matters to me is how the accident happened and not how far it got, not how many people were sickened by that.” That was crazy. So we went door to door. And the first time we got about 40 people that were affected. Their stories were identical to the Earlimart stories . . . and the next time we went out, [we found] 91 people [who had been poisoned]; and then after the DPR people got involved and the county ag commissioner somewhat got involved. Then it was 268 people that were affected in Arvin from that drift. And by being affected, these people were just inundated with the smell, kids vomiting in the front yards, people coughing. One woman said she felt like she was going to die. She could not even breathe. She said, “I thought the big bomb had attacked.” She thought it was a terrorist attack.¹²

One year later, another large-scale pesticide drift incident occurred in Lamont, which like Arvin and Earlimart, is located in the southern end of California’s Central Valley. On October 3, at least twenty-four Lamont residents suffered a range of acute toxicity symptoms, including nausea, vomiting, blurred vision, and impaired and painful breathing, after the highly toxic soil fumigant chloropicrin drifted from a field one-quarter of a mile away. Emergency crews responding to the scene determined that the symptoms were not severe or persistent enough to warrant further investigation, and they instructed residents to return home and air out their houses. The second half of the pesticide application proceeded the following day, again drifting into the same residential area, and this time causing illness among over two hundred additional residents. On this second day, the victims were evacuated to a nearby parking lot, where they waited for several hours without food, water, medical treatment, or access to bathrooms.¹³ Barricades were set up on the edge of town, and emergency response crews prevented residents from leaving the area. Despite officials’ claims to the contrary, the Lamont incident demonstrated that regulatory agencies had made little progress on the issue of pesticide drift—failing to even improve incident response protocol, which is the most basic and reactionary of changes clearly needing to be made.¹⁴

Like pesticide drift incidents that have occurred elsewhere throughout the United States and around the world in recent years, these and other California ones attracted the media’s attention; undermined industry’s claims about pesticides as controllable; illustrated the inhumane, incoherent, and ineffective nature of regulatory agencies’ incident response protocol; raised questions about the role of race, class, and legal status in shaping pesticide use and regulation; and inspired various residents and other activists to collectively organize in order to take on the problem of pesticide drift. The California residents who participate in such grassroots activism live in agricultural communities across the state and include a

diverse array of Latino/a farmworkers and their family members, other low-income agricultural community residents of color, and white, middle-class, and upper-middle-class professionals. Several regional and statewide nongovernment organizations (NGOs) have played an important function in cohering these various grassroots strands of pesticide drift activism and thus are featured prominently in this book. Notably, the San Francisco–based Californians for Pesticide Reform (CPR) organizes all of the disparate groups working on pesticide drift into a statewide coalition, the San Francisco–based Pesticide Action Network (PAN) of North America serves as the scientific arm of the nascent movement, and the Sacramento-based Pesticide Watch has periodically provided organizing assistance to community groups interested in pesticide drift.¹⁵ California Rural Legal Assistance, United Farm Workers (UFW), and the Center on Race, Poverty, and the Environment, all with multiple offices around the state, have also provided crucial institutional support to community-based groups active in pesticide drift politics. These organizations collaborate with other environmental organizations throughout the United States to share strategies and resources, and partner on national-level and international campaigns.

While many of these residents and other activists initially started politically engaging in pesticide drift in response to one or more large-scale incidents, their continued commitment to the issue stems from a shared conviction that pesticide drift is a part of everyday life, contributes to an endless array of health problems, and is largely ignored by regulatory officials. In other words, as egregious as the big incidents are, activists view them as unfolding on a landscape of less dramatic but pervasive agricultural chemical contamination and regulatory neglect. Activists' stories, the ways in which they conflict with those of regulatory officials and industry, and their tremendous implications for environmental regulation and public health fueled my own interest in the subject, and these tensions constitute the heart of this book.

The ongoing nature of pesticide drift despite efforts by the agricultural industry, environmental regulatory agencies, and alternative agrifood movement to make agriculture more environmentally sustainable—as well as the conflicting stories told about the problem—raise fundamental questions that must be examined to understand this environmental problem and its solutions. Why do pesticide drift incidents occur in a context of progressive environmental change? How do we explain the coexistence of two completely different interpretations of the problem itself? Which of these has guided the regulatory response to pesticide drift, and with what consequences? Like other scholars of EJ, I argue that understanding

these contradictions requires that we recognize pesticide drift as not only a technical problem but also a social one, rooted in systems of inequality and oppression. Moreover, I emphasize throughout this book that environmental inequalities today must also be understood within a broader context of mainstream environmental politics dominated by particular—and particularly problematic—conceptions of justice.

A Technological and Social Problem

In some ways, pesticide drift is a complex, technical problem best understood by medical and environmental scientists. First, the study of pesticide drift includes analyzing the countless ways in which pesticides move through, change in, and interact with the environment. The nine-hundred-plus pesticide active ingredients registered for use in California are manufactured into over thirteen thousand different formulations, in which various amounts of different pesticides are mixed together and applied with innumerable “inert” ingredients that help the pesticide reach and/or adhere to its target.¹⁶ All of these various formulations interact with each other and the ever-changing environments into which they are applied in countless ways, most of which are poorly understood. Also, pesticide drift analysis includes studying pesticide exposure, such as the various pesticides’ different routes of exposure (dermal, dietary, or inhalation) and the extent to which some human populations (especially children and farmworkers) are subject to higher rates of exposure. Finally, analysts must take into account the actual health effects of exposure to the various pesticides, where every pesticide interacts with the human body in its own way, produces or contributes to its own collection of health problems, interacts in unknown synergistic or cumulative ways with other environmental toxins, and affects certain sensitive populations (children, fetuses, the elderly, the ill, and the chemically sensitive) more than the “average” body. I elaborate on these technical complexities in chapter 2 of this book.

That said, pesticide drift must be understood as a social problem as much as a technical one, and the intersections between these social and technical dimensions explain the continuation and invisibility of pesticide drift. As I will illustrate throughout the book, experts’ abilities to understand and control pesticide drift are challenged not simply by the technical complexity of agricultural pesticides but also from the highly unequal and oppressive social relations in which they are used. Although pesticide drift affects all people living in and near agricultural fields, farmworkers and their families are exposed most frequently. I will show how the poverty,

legal status issues, language barriers, political disenfranchisement, and other forms of social marginalization widespread in farmworking communities tend to obscure pesticide exposures and other problems. I will show as well how other pesticide drift victims and activists, although more empowered than immigrant farmworkers, are nonetheless marginalized within the environmental regulatory arena and by mainstream pesticide activism. At the same time, various industry groups exert extraordinary influence within environmental regulatory and policy institutions. Industry groups' financial power, strong coherence, scientific resources, and social networks enable them to shape the terms of regulatory debate in ways that residents of agricultural communities are simply unable to do. Environmental regulation consequently has been bounded by a narrow interpretation of pesticide drift as a series of isolated, unfortunate events requiring minimal regulatory change.

Justice in Environmentalism

It is because of these social factors that pesticide drift can be conceptualized as an *EJ* problem. Since at least the 1980s, the *EJ* movement has made a scathing critique of the environmental regulatory state and mainstream environmental movement alike for being inattentive to the uneven distribution of environmental problems as well as the ways in which social inequalities inhibit environmental problem solving. The *EJ* movement is actually a diverse collection of activist groups that primarily represent a confluence of antitoxics activism (with its economic analysis of corporate power and economic structures of pollution) and civil rights activism (with its critique of social structures of race-based oppression).¹⁷ *EJ* groups loosely align along a common framing—namely, that the distribution of environmental problems is inextricably linked with poverty, racism, and other forms of oppression, and that these same social factors unfairly shape the ways in which the environmental regulatory state interprets and addresses environmental problems. *EJ* activists also levy their critique at the mainstream environmental movement, arguing that the latter has ignored and thus reproduced environmental inequalities by focusing on protecting wilderness and endangered species, sidelining the environmental issues facing poor communities and communities of color, otherwise privileging a conception of the environment dislocated from relations of social inequality, and relying on litigation, legislation, and other pathways to environmental change that exclude so-called nonexperts from participation.¹⁸

The EJ movement explicitly conceptualizes environmental problem solving as a question of justice, and accordingly, is widely understood as innovative in bringing *justice* into the conversation of environmental politics. In common language, people refer to justice as a singular concept in this way—as the epitome of fairness, or some unquestionable *right* state. People lament the absence of justice throughout much of the world, and many academics and other critical writers who study social problems call for greater attention to social justice in their various fields and disciplines. Yet justice is not an uncontested concept. In fact, Western philosophers have long debated the meaning of political justice, opening that black box to rigorous interrogation. Several prominent scholars have explicitly articulated the specific and multiple conceptions of justice advocated by the EJ movement; the work of Luke Cole and Sheila Foster, David Pellow, David Schlosberg, Iris Young, Christian Hunold, and Robert Figueroa have particularly influenced my own work in this regard.

My goal in this book is to push this line of inquiry a bit further. I contend that it is neither accurate nor useful to think about the world around us—the one that the EJ movement actively confronts—as generally devoid of justice. Whereas the EJ movement is typically framed as being unique in its concern for justice or fairness within environmental politics, I aim to show that it is more accurate and instructive to conceptualize the EJ movement’s claims to justice as a reaction to other, more prevalent notions of justice that deeply and widely shape and are upheld by mainstream environmental institutions and practices. To do this, I draw on the work of a handful of scholars—notably, Melanie DuPuis, David Harvey, and Iris Young—who identify the political theories of justice that shape not just EJ activists’ but also more “mainstream” actors’ approaches to solving environmental problems. Although we live in a world that is far from ideal or just, certain theories of justice nonetheless shape the design of political institutions and policies. As will become clear, environmental inequalities stem not only from a lack of knowledge, care, or political will but also from many actors’ attempts to do the right thing.

Every theory of justice specifies its own vision of a just or fair society, and as such, the appropriate responsibilities of the state vis-à-vis the economy and the public in regard to questions of freedom, equality, participation, and other sorts of political rights. In this book, I elaborate on the theories of justice that define the context in which EJ and other social movements unfold. To suggest that justice was absent from environmental politics before EJ came along would eliminate the important opportunity to highlight the dominant theories of justice that undergird mainstream

efforts to solve environmental problems, how those theories of justice are socially and environmentally problematic, how and why their influence has increased over time, why they seem so natural and reasonable, and why effective and fair environmental problem solving requires a different notion of justice itself. Predominant ideologies—including particular conceptions of justice and fairness—are important to understand, since they reinforce and legitimize capitalist expansion, the weakening of the environmental regulatory state, and the associated environmental fallout. These predominant notions of justice must be spelled out, and their material forms critically examined, before we can advocate a different and better vision of justice, and hence a vision of a just environmental politics.

Throughout this book, I will outline the ways in which ideas about justice shape the primary means through which various actors try to address pesticide drift—the agricultural industry (chapter 3), the environmental regulatory state (chapter 4), and alternative agrifood activists (chapter 5). I emphasize how these ideas of justice function *ideologically*—making existing social structures and institutions seem natural and necessary. In contrast, pesticide drift activists, like the EJ movement in general, argue for a different conception of justice, and throughout the book I showcase the ways in which they pursue this goal. Like many other EJ groups, most pesticide drift activists work in grassroots, community-based groups with little or no funding, fight toxics in their neighborhoods, point out and contest the ways in which pollution and illness stem from various forms of oppression (including, but not limited to, those of race and class), and demand entirely different roles for scientific uncertainty and public participation in environmental problem solving. I highlight their work as a grounded, current, compelling story that illustrates the logic behind the EJ movement's claims to justice. That said, pesticide drift activists use EJ framings strategically and irregularly, abandoning them at times to build alliances with other, less radical activist groups. I elaborate on these activist practices, using my observations to discuss both the contributions and limitations of EJ arguments.

Justice in the Literature

This book is thus a story about how environmental problems like pesticide drift continue within a context of increasing environmental activism and the mainstreaming of environmental politics. Empirically, as mentioned earlier, this book concentrates on California agriculture. Scholars have paid considerable critical attention over the years to systems of food

production, distribution, and consumption because of their tremendous impacts on the planet and all its inhabitants. Agriculture is a key sector of global and local economies, the direct source of employment and livelihood for hundreds of millions of people, a primary source of open space, the largest use of land on our planet, a tremendous manipulation of natural resources, one of the largest sources of air and water (and now genetic) pollution, the source of human sustenance, and a space in which we negotiate and interrogate our relationship with the natural world as well as each other. Scholarship for academic and laypeople alike provides keen insights along with unique perspectives that help us understand how social inequalities and environmental problems develop in agricultural systems and later become obscured, neglected, and contested.¹⁹

Recently, such work has come to focus on the politics of “sustainable” agrifood systems—a framework for reforming agrifood systems to more meaningfully incorporate the principles of ecology, economic viability, and social justice.²⁰ In terms of social justice, most scholars have concentrated exclusively on economic justice for small-scale farmers, and a much smaller but growing body of scholarship is directly addressing food justice issues facing low-income eaters and the labor justice issues experienced by farmworkers. Yet little attention is being paid to social justice as it relates to the environmental context of agricultural pesticide use. Although specifically pertaining to agriculture, this silence points to questions that increasingly structure the work of a broad range of scholars: In what ways do real people actually experience environmental problems and regulations? In what ways do those experiences vary between social groups and across space, and what factors shape that unevenness? Why do some groups seem to be able to influence how a particular environmental issue is regulated, and how do other groups’ viewpoints and experiences become marginalized?

Scholarship on EJ activism speaks directly to this silence, paying explicit attention to the ways in which social inequalities exacerbate environmental problems, help to distribute them unevenly, obscure them from public view, and complicate seemingly straightforward solutions. Such research often explores specific case studies of EJ activism, highlighting the efforts of activists who organize themselves in response to local environmental problems and critically confront the multiple forms of injustice that produce and bolster unequal environmental outcomes.²¹ Many scholars have stressed the ways in which antitoxics activists and others in the EJ movement have gained traction by mobilizing not just material resources but also nonmaterial, symbolic ones, such as the compelling cognitive

“frame” of EJ. The EJ frame has been shown to serve as a crucial mechanism through which residents rally each other and through which disparate community-based battles cohere into a movement, especially where the hazards themselves are scientifically ambiguous.²²

Research on antitoxics activism helps to politicize the analysis of scientific research, showing how expert systems of knowledge and scientific standards of proof tend to privilege polluters and thus reinforce patterns of illness and the social inequalities they stem from.²³ Moreover, such research illustrates the convictions and insights of grassroots activists, thereby problematizing the standard assumption that formally trained experts are the only bearers of legitimate knowledge. These social movements and the academic analyses about them have also helped to demonstrate that patterns of pollution and illness are deeply rooted not only in malfeasance but also in dominant social ideologies (especially modernist ideas about human dominance over nature, an unflinching optimism about technology, and a belief that increasing production can solve social problems).

Environmental justice researchers also turn their critique to the mainstream environmental movement, arguing that its prioritization of middle-class conceptions of the environment effectively marginalizes the environmental burdens endured by the poor and communities of color. Such analyses draw on a growing body of work in environmental history that critiques unreflexive accounts of environmentalism that privilege conservationism and exclude the role of racism and human labor in “nature.”²⁴ Critiquing the ways in which the mainstream environmental movement and environmental policies have ignored the effects of social inequalities, EJ scholars call for bringing *justice* into environmental politics.²⁵

That said, the meaning of justice itself has remained a nebulous and underspecified concept. This has been ameliorated to a considerable extent in recent years as EJ has captured the attention of political philosophers, who draw explicitly on contemporary political theories of justice to clarify the justice claims made by EJ scholars and activists. This turn serves an important function. As Andrew Dobson and other philosophers have observed, the ability of justice to contribute to, for example, environmental sustainability depends entirely on how the terms are defined.²⁶

In her book *Justice and the Politics of Difference*, Young argues that the meaning and shape of justice are contingent on the causes, shape, and consequences of *injustices* in the real world.²⁷ In contrast to political philosophers who sought to develop one universal, abstract theory of justice, Young contends that we must start by studying actually existing injustices in

context, the social structures and institutions that uphold them, and the social movements that fight against them.

Young analyzes the claims and experiences of contemporary social movements pursuing social justice. Like many egalitarian political philosophers, she identifies the inherent injustice in material inequality and thus the need for more meaningfully distributive justice. Young and others also maintain that justice requires recognizing and redressing various forms of cultural oppression—the social relations and institutional processes that reproduce unequal distributive patterns over time and impede some people from standing as full members of society. Justice, as a result, requires recognition of the social structures that oppress certain social groups so that those groups can overcome the institutional subordination they experience.²⁸ Additionally, because unequal distribution and oppression fundamentally exclude certain social groups from full participation in politics, many scholars of EJ and other social movements argue that justice requires participatory parity. Finally, Amartya Sen, Martha Nussbaum, and other political philosophers have stressed that justice requires an adequate amount of capabilities—the basic institutions, resources, freedoms, and opportunities needed for people to be full members of society.²⁹ Key examples include jobs, living wages, clean air and water, and affordable and accessible public transit, health care, housing, and food.

Among the scholars who theorize EJ, many assert that it requires combinations of distribution, recognition, participation, and/or capabilities. For example, Cole, Foster, Hunold, Young, Kristin Shrader-Frechette, and Robert Lake emphasize distribution and participation; Figueroa points to distribution and recognition; and Pellow's work incorporates distribution, recognition, and participation.³⁰ In his book *Defining Environmental Justice*, Schlosberg contends that the EJ movement demonstrates a comprehensive notion of justice—one that joins distribution, recognition, participation, and capabilities—and that this is both a laudable and realistic way to address environmental injustices.³¹ Schlosberg claims that the EJ movement itself illustrates how distribution, recognition, participation, and capabilities can be integrated—and that EJ activists also persuasively argue that effective environmental problem solving requires that they *must* be integrated.³² He notes the “interplay” of these four components of justice—the ways in which they are mutually constitutive:

Not only are there different conceptions of justice apparent in the [EJ] movement, but the movement also recognizes that these notions of justice must be inter-related: one must have recognition in order to have real participation; one must have

participation in order to get equity; further equity would make more participation possible, which would strengthen community functioning, and so on.³³

In this book, I follow Schlosberg's lead in bringing together these four components of justice. Throughout the book, I use the concrete example of pesticide drift activism to illustrate the useful and necessary role that distribution, recognition, participation, and capabilities play in a socially just approach to environmental problem solving.

Yet the conceptions of justice that pesticide drift activists and the broader EJ movement work with as well as advocate are only half of the story. The EJ notion of justice must be understood not as appearing in a vacuum but in part as a response to the other conceptions of justice that shape and legitimize mainstream environmental politics (and politics in general), however incompletely, imperfectly, or unintentionally. Notably, although egalitarian ideals shaped the development of many crucial liberal political institutions in the Western world throughout the early and mid-twentieth century, the state's approach to addressing environmental problems has largely been forged by a utilitarian conception of justice.³⁴ Utilitarianism calls for maximizing welfare—where state interventions are part of providing the greatest good for the greatest number. Such a perspective justifies the widespread use of a cost-benefit analysis as the basis for environmental decision making in the United States today. David Harvey characterizes this as the “standard view” of environmental management. While recognizing the contributions to environmental protections that have been made under the standard view in the past century, Harvey points out that within a utilitarian framework, the “only serious question is how best to manage the environment for capital accumulation, economic efficiency, and growth.”³⁵ In a context that privileges economic growth, the state is generally only able to intervene when there is quantified, certain scientific evidence documenting links between an environmental hazard and sufficiently egregious harm. Because this is essentially impossible for hazards whose impacts are realized unevenly across space and time, environmental problems have bloomed under the watch of utilitarian-based environmental regulatory apparatuses.³⁶

In the wake of increasing critiques of the utilitarian, standard view of environmental management, two other conceptions of justice—libertarianism and communitarianism—have increasingly gained prominence over the past thirty years in mainstream Western environmental politics, and they both exacerbate problems like pesticide drift in important ways. Libertarians view individual liberty as the hallmark of justice, identify private property as the institution that best nurtures and protects liberty,

and endorse the free market as the only socially just institutional mechanism of exchanging property. Communitarians argue that members of a “community” possess a shared understanding of the good life and thus are in the best position to identify their own conceptions of justice and injustice. Communities are said to reach these common understandings through tradition, shared experience, geographic proximity, and “relations of trust.”

Throughout this book, I identify the increasingly significant roles that these theories of justice play in mainstream environmental politics, how those roles evolved, what the material consequences are, and how pesticide drift activists show that a radically different notion of justice is needed to effectively solve today’s most pressing environmental problems. I show that libertarian and communitarian conceptions of justice increasingly influence and/or are reinforced by the efforts of the agricultural industry, the environmental regulatory state, and most agrifood activists to pursue environmental sustainability. I suggest that such ideas articulate with a context of considerable oppression and inequality in ways that reproduce—rather than alleviate—grave environmental problems like pesticide drift. I also highlight the mechanisms that make such ideas seem natural and reasonable, such as their propensity to displace environmental fallout to invisible bodies, to distant places, and into the future. As I will demonstrate, libertarian and communitarian theories of justice gain traction because the policies they inspire as well as justify allocate benefits largely to the relatively privileged, in turn deepening environmental inequalities at the same time that they claim to ameliorate them.

I maintain that the efforts by the agricultural industry, the environmental regulatory state, and alternative agrifood activists generally fail to adequately address the problem in part because they interact with libertarian and communitarian theories of justice. This is not to say that justice exclusively or even intentionally guides the efforts of industry, the state, or all activists, nor that these theories of justice are solely to blame for today’s environmental problems. In fact, I spend considerable space in this book identifying the many other material and cultural structures that undergird predominant (and inadequate) approaches to solving environmental problems. My point is simply that identifying the theories of justice that justify and give traction to predominant solutions to environmental problems (and which, in turn, are reinforced by them) helps to explain the shape of mainstream environmental politics as well as its shortcomings—two critical and essential tasks in the broader move to more effectively and fairly solve present-day serious environmental

problems. Throughout the book, I also showcase the work of pesticide drift activists, paying particular attention to the different vision of justice they advocate and the implications that poses for environmental illness and how we think about social justice. I find that effectively addressing environmental inequalities will require a state-society relationship that builds on the EJ notion of justice and strays wildly from the libertarian and communitarian ideas of justice that increasingly shape mainstream environmental politics today.

The Study

When I first began researching pesticide drift in 2001, I was eager to sift through the various proposed solutions and precisely identify the combination of policies and technologies that would solve the problem. After conducting my first round of interviews with people deeply invested in the issue, however, I discovered that the political conflicts over pesticide drift were fundamentally about the nature of the problem itself. Tremendous disagreement exists about every possible dimension of the problem, and ample evidence backs up each wildly different claim: how often pesticide drift occurs (rarely or daily?), how many people it affects each year (a few hundred or millions?), which people are most exposed (schoolchildren, farmworkers, or others?), what sorts of illnesses it causes (acute or chronic? minor or serious?), why it occurs (accident or inevitable?), and the state of scientific knowledge on which pesticide regulations are based (shoddy or robust?). Since crafting effective solutions requires that we first understand the nature of the problem, I thus shifted gears. I focused my attention instead on identifying the stories that people were telling about the problem itself, the evidence they used to back up their claims, and the context in which their ideas developed. Throughout my research, I found that stories revealed not only different ideas about pesticide drift but also fundamentally different notions of what justice looks like.

I concentrate on narratives—stories—to identify the points of contention in the public debates over pesticide drift. Narratives help to construct the world around us by defining what is possible and real. Environmental historian William Cronon emphasizes that narratives are a way to find values in a contradictory world—that we organize ecological change into stories with beginnings and endings in order to judge the morality of human actions.³⁷ Like other discourse analysts, Katherine Jones underscores that narratives have real, material consequences, as they help to shape the way that people understand the world around them:

It is the power of selection and simplification—or categorization—that gives representations their persuasive power. . . . They both encourage certain meanings and constrain or limit other meanings. . . . [T]he rules of social order and the practices of representation go hand in hand.³⁸

Michel Foucault, whose research dramatically challenged the way we understand the relationships between power and discourse, acknowledges that while some discourses reinforce the status quo, others explicitly contest inequalities:

We must make allowance for the complex and unstable process whereby discourse can be both an instrument and an effect of power, but also a hindrance, a stumbling block, a point of resistance and a starting point for an opposing strategy. Discourse transmits and produces power; it reinforces it, but also undermines and exposes it, renders it fragile and makes it possible to thwart it.³⁹

The purpose of my project, as with much other academic work, is to search for “other,” subordinated narratives along with the suggestions they present for the making of a more socially just and ecologically sustainable society. I showcase direct statements from the actors themselves because they illustrate the hegemonic and marginalized narratives about pesticide drift. These direct statements exemplify common arguments and claims. Accordingly, they should be understood as representative of broader patterns, and unique only in terms of their clarity and brevity. In presenting the two main stories told about pesticide drift, my goal is not to determine which one is correct. Rather, I believe that they are both valid but incomplete. Each one offers important insights and its own partial perspective into a complicated, imperfectly knowable world. Each story highlights certain bits of information and sidelines others, privileging some issues over others.

Throughout the book, I emphasize two conclusions that I draw from this narrative analysis. First, the predominant story told about pesticide drift does not account for the ways in which social inequalities and oppressive social relations contribute to pollution and illness; it in fact ignores those relationships and renders them invisible. I argue that effective environmental problem solving must meaningfully account for the effects of inequalities and oppression on our abilities to understand as well as prevent problems like pesticide drift along with the grave illness and fear they add to. Second, I argue that the conflict between the two narratives serves as a window into competing conceptions of social justice. The debates over pesticide drift provide us an opportunity to critically reflect on the strengths and weaknesses of the particular visions of justice that govern politics today, not to mention those that

could possibly help us address environmental and other problems more effectively.

To determine the stories that people tell about pesticide drift, from 2001 to 2009 I gathered data from multiple sources: interviews, observation, and printed materials. I draw heavily on over a hundred in-depth, loosely structured interviews that I conducted with regulatory officials, research scientists, pesticide drift activists, and other agricultural community residents. In analyzing those interviews, I sought to determine how various actors define pesticide drift, how they frame the scope and scale of the problem, what an appropriate set of solutions would be, and what sources of information they draw on to make their decisions and claims. I also asked these questions while examining published materials from regulatory agencies and activist groups, reading newspaper reports of pesticide drift events, and observing key events like activist demonstrations and regulatory hearings. To situate these various stories within their political-economic context, I also use secondary data on pesticide use patterns and demographic change, and also historical accounts of California agriculture, farm labor, pesticide activism, and regulatory reform in California.

Throughout the book, all unreferenced quotes are excerpts from my own interviews. In this book and my other published work, I typically obscure the identity of the individual speakers. I do this for two reasons: to protect a subset of my informants for whom speaking candidly with me could put them in jeopardy, and to focus the reader's attention on the narratives and institutional practices rather than the individual people.

This case study focuses on the southern end of California's Central Valley. I targeted this region for several reasons: large-scale pesticide drift incidents have occurred there on a regular basis more than in any other part of California; use rates of the most toxic pesticides there consistently rank among the highest in the state (and the nation); its air pollution ranks among the worst in the nation, rivaling that of nearby Los Angeles; people who suspect they have been exposed to pesticides consistently report being ignored by regulatory officials; and the region is in a state of "significant economic distress," with the average per capita income well below state and national averages.⁴⁰ Also, the Central Valley receives comparatively little attention from academic researchers, the state, or the general public; it is in many ways the "forgotten" California. The Central Valley is neither beaches nor mountains, but the space in between; interstate traffic races across or gingerly along the edge of this landscape to reach more scenic and cosmopolitan destinations. My motivation to focus

on the Central Valley was fueled by residents' repeated assertions that this place has become, as one said, "California's dumping ground"—similar to the "sacrifice zones" elsewhere that Robert Bullard, Valerie Kuletz, and other scholars have studied.⁴¹ Despite being home to the state's highest population growth rates along with a number of new bedroom communities to Los Angeles and the San Francisco Bay Area, the Central Valley appears to many residents as having been abandoned as a wasteland of toxic freeways, agriculture, waste incineration, and megadairies. I hope that this book will help to bring constructive yet critical attention to this and other zones of sacrifice in ways that honor the diversity, dreams, skills, and rights of its residents as well as the ecologically sustainable spaces that these landscapes can become.

The choices I have made here—which case to study, how to analyze it, and how to write about it—are all made in the spirit of critically and normatively evaluating the status quo, like most of the scholars I reference throughout. Young phrased this motivation nicely in her introduction to *Justice and the Politics of Difference*:

Social description and explanation must be critical, that is, aim to evaluate the given in normative terms. Without such a critical stance, many questions about what occurs in a society and why, who benefits and who is harmed, will not be asked, and social theory is liable to reaffirm and reify the given social reality.⁴²

The Book's Organization

In chapter 2, I make my case that pesticide drift is a dangerous socio-environmental problem worthy of interrogation. I draw on a wide range of social and technical data to explain why pesticide drift is best understood as a case of widespread yet generally invisible and ignored chemical contamination. From there, I turn to analyzing the three social groups that most directly shape the problem of pesticide drift: the pesticide industry, the environmental regulatory state, and alternative agrifood activists. In chapters 3, 4, and 5, I describe those actors' efforts to address the problem of pesticide drift and why those efforts have generally failed, identifying in particular the specific ways in which libertarian and communitarian theories of justice undergird many of those efforts and undermine their effectiveness.

I start with industry, in chapter 3, to explain how chemical pesticides became the predominant model of agricultural pest management—how a diffuse network of industry actors, each with varying degrees of political-economic power, invested deeply in the "pesticide paradigm" of

agricultural pest management. I then describe industry's efforts to address pesticide drift, look at the industry actors' shortcomings, identify their particular intersections with a libertarian notion of justice, and explore the work of pesticide drift activists to confront industry's culpability in the problem of pesticide drift.

In chapter 4, I turn to the attempts of environmental regulatory agencies to step in and control pesticide drift in ways that industry cannot. I draw critical attention to how libertarian and communitarian theories of justice shape trends in environmental regulation and effectively undermine regulatory efforts to control the problem of pesticide drift. I conclude that chapter by showcasing the ways that pesticide drift activists confront pesticide regulatory agencies, and I indicate how their demands and practices implicitly criticize libertarian and communitarian theories of justice while simultaneously articulating an entirely different notion of what justice means. Here, I also detail pesticide drift activists' policy prescriptions and introduce the precautionary principle as an overarching framework for putting pesticide drift activists' theory of justice into practice.

In chapter 5, I then examine the alternative agrifood movement's efforts to critique and ameliorate the failures of both industry and the state. Pesticide drift activism overlaps with other branches of alternative agrifood activism in terms of individuals and institutions. However, I emphasize the distinction between pesticide drift activism and the predominant branches of the alternative agrifood movement in order to highlight some notable differences between the two groups (especially in terms of the contrasting models of change that they prioritize and the different theories of justice that guide their work). I explain why the alternative agrifood movement's priorities and practices have historically sidelined the problem of pesticide drift experienced in agricultural communities, focusing on these activists' material constraints as well as the ideological adherence by some key elements of the alternative agrifood movement to libertarian and communitarian theories of justice. I conclude that chapter by describing the ways that pesticide drift activists manage strategic relationships with the sustainable agriculture movement as well as other social movements, demonstrating how their approach to activism contains a critique of the theories of justice underlying most of the alternative agrifood movement and an entirely different notion of what justice means.

Lastly, in chapter 6, I summarize the factors that explain why the problem of pesticide drift festers despite various actors' environmental sustainability efforts, evaluate the achievements of pesticide drift activism (both in

terms of material accomplishments and its role in casting EJ in a new light), and make several specific policy recommendations based on what the case study tells us about what justice requires. In particular, I focus on the notion of “institutionalizing” EJ—integrating the EJ movement’s theory of justice into the everyday work of environmental regulatory institutions. I examine in more detail the precautionary principle as a framework for doing exactly that.