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Modeling Environmental Justice: A Normative Conception for Healthier Communities

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Philosophy

by

Megan Smith Gendreau

June 2011

Dissertation Committee:

Professor Carl Cranor, Chairperson
Professor David Eastmond
Professor David Glidden
Professor Andrews Reath

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2011

This Dissertation of Megan Smith Gendreau is approved:

Committee Chairperson

University of California, Riverside

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Dedication

This work is dedicated to Lester Mazor.

You were with me at the start, and have stayed with me throughout.
I regret that you are not here to watch me finish, but I am thankful to have known you for
as long as I did.

ABSTRACT OF THE DISSERTATION

Modeling Environmental Justice: A Normative Conception for Healthier Communities

by

Megan Smith Gendreau

Doctor of Philosophy, Graduate Program in Philosophy
University of California Riverside, June 2011
Professor Carl F. Cranor, Chairperson

The term environmental justice (EJ) is broadly used to frame discussions regarding unjust or unequal distributions of environmental harms between different communities. Typically, we see examples where air, water, and soil quality are significantly worse in poorer communities, especially poorer communities of color, than in wealthier, white communities. While poor environmental quality is not desirable, severely environmentally impacted communities, and the individuals who inhabit them, often face much worse consequences, in the form of health effects that can often have long-term implications for opportunities and achievements.

The project of my dissertation is the creation of a flexible and empirically-informed model for both diagnosing the injustices and guiding policy decisions that will result in a more just distribution of risks, and prevent some of the grossest injustices. John Rawls and Amartya Sen provide the philosophical basis for the claims of injustice, and help to guide the normative conception I develop the latter parts of the work. Ultimately, I argue that we need a conception of environmental justice that will lead both to just institutional and background conditions to prevent harms, as well as providing mechanisms of restorative justice for those who have already faced harms. The Rawlsian

project of “Justice as Fairness” will provide guidance for the institutional framework whose goal is the creation of more perfect justice, while Sen’s work will aid in making comparative judgments of the well-being of particular individuals.

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Abbreviations

CAA: Clean Air Act

CCA EJ: Center for Community Action and Environmental Justice

CWA: Clean Water Act

DDT: dichlorodiphenyltrichloroethane

EJ Community: Environmental Justice Community

EPA: US Environmental Protection Agency

GHGs: Green House Gases

OSHA: Occupational Safety and Health Administration

PAHs: Polycyclic aromatic hydrocarbons

PBDEs: polybrominated diphenyl ethers

PCBs: polychlorinated biphenyls

PM: particulate matter

1. Situating the Problem

When thinking about the environmentalism, people frequently imagine preserving wilderness areas, or protecting endangered species and ecosystems. In contrast, the environmental justice movement focuses on the environmental conditions of human habitats, and how those conditions come to human life. While the concerns of environmental justice are importantly “environmental”, considerations of “justice” ultimately play the more significant role. For this reason, the environmental justice movement shares a great deal in common with social justice movements, which informs both activist strategies and theoretical discussions.

The focus of environmental justice is the (hopefully) uncontroversial idea that all people should have the opportunity to live, work, and learn in communities that are not detrimental to physical or emotional health. In thinking about environmental justice, we must investigate anything that can negatively impact a person’s quality of life. This ranges from things that cause physical harm, like particulate matter in the air, to psychological harms, like living in fear that a nearby incinerator will release toxic gases into the air, or even activities that disrupt daily life and its patterns, like a train that wakes sleepers and makes enjoying outdoor space impossible.

Foremost among the concerns of environmental justice advocates is the distribution of environmental hazards.¹ Communities that are heavily impacted by

¹ Which are facilities or activities that can be linked to negative health outcomes in human populations. These will be more thoroughly discussed in the next chapter, but some of the most common are industrial facilities, waste dumps, transportation hubs, and power plants.

environmental hazards are, by and large, communities where most of the residents are of low socio-economic status and identify as people of color. Although individual toxic sources may result in harms to health, typically such communities face a large number of environmental hazards, and it is the combination of these hazards, along with social conditions that may make people more susceptible to harms, that makes studying environmental justice so challenging.

Over the past four decades, the claims of poorer communities to receive greater environmental protections have become increasingly public as part of the discourse about social justice. Beginning with events like the Love Canal disaster of the mid 1970's², environmental justice issues have become prominent in both political and popular culture, especially with the release of films like *Erin Brockovich* and *A Civil Action*.³ Since the early days of the environmental justice movement, the efforts of community activists have also been recognized by the federal government, in areas like Superfund legislation, which provides funding for the cleanup of toxic waste sites, and various measures taken by the US Environmental Protection Agency (EPA).⁴ While the current head of the EPA⁵,

² Where a Niagara Falls, NY neighborhood was built on a toxic waste dumpsite. The resulting political action led the creation of the EPA's Superfund program.

³ *Erin Brockovich*, released in 2000, told the true story of a fight over water quality in a California town. 1998's *A Civil Action* was also based on a true story, and dramatized the legal fight against water pollution in a Massachusetts town.

⁴ A more recent addition is President Clinton's Executive Order 12898, which created a policy framework for addressing environmental justice by federal agencies, requiring that a variety of agencies incorporate it into their larger program of work.

⁵ The US Environmental Protection Agency creates regulations that are binding for all states, while individual states typically have their own environmental agencies. Unless otherwise specified, when I use the term "EPA", I am referring to the federal agency.

Lisa Jackson, has publicly stated that pursuing issues of environmental justice is one of the primary goals of her tenure, determining how best to achieve justice in such cases still presents a significant challenge to all stakeholders, including those living and working in affected communities and those who are responsible for drafting policy and making determinations about the future of those communities.

As a movement, environmental justice has largely been grass-roots, and people who live in impacted communities have largely borne the burden of bringing their concerns to the attention of authorities. Thus, there is no fully-articulated theoretical grounding for the goals of environmental justice and there is a lack of consensus about appropriate policy responses. To this end, this work provides a model for looking at the issues presented by impacted communities, and responding to the injustices they present.

Importantly, any theory of environmental justice needs to take seriously that environmental injustices take place at the level of persons and communities and must be addressed at that level. While there are some general claims that we can make about human health and human flourishing, our approach needs to recognize the particular character of individuals and communities, and thus will leave a great deal of space for articulation and re-articulation in different contexts.

Considerations of Justice

Of significant concern to philosophers are the activities associated with practical reasoning, which largely concerns how we make choices and determine the best course of action given available opportunities. Important for making such decisions is the fact that

we live among others, who, like ourselves, have goals, desires, and values. Discussing relationships among individuals ranges from understanding one's relationship to oneself, one's family, and one's community, to considerations of how states should treat their citizens and how states should interact with other states. Theorizing about these relationships falls under the heading of what we call moral philosophy, which can be defined, for our current purposes, as the study of what is good, which actions are right, and why. Discussions of the "good" tend to focus on what constitutes a good human life, while questions of "right" involve thinking about right action, or what persons ought to do under specific circumstances.⁶

In contemporary debates, discussions about justice typically focus on relationships between persons, and how persons ought treat one another, but more frequently on relations between individual persons and either states or those with considerable political or economic power. Hence, justice tends to focus on systems of social cooperation, by looking at how rights, liberties, responsibilities, wealth, and other resources should be distributed to ensure all have equivalent citizenship. However, questions of justice are not merely questions about distributions, but about what human lives actually look like both on their own as well as when compared to other persons. For this reason, the focus of my current work is concerned broadly with political or social

⁶ There are philosophers who deny this distinction, most notably those operating within the Marxist tradition. I tend to align myself with such a view, and I think that a version of this view might exist in Amartya Sen's work on justice.

justice, which considers questions of distributive justice, as well as how persons are faring.⁷

Injustices (in particular political or social injustices) are special kinds of wrongs, and I'd like to offer three general criteria for identifying them. While we may casually cry "injustice" when we believe that we are being mistreated by our peers, our more serious thoughts about justice are typically reserved for circumstances where states wrong their citizens, or where forms of ill-treatment are shown to be systematic. In effect, justice frequently has to do with relations of power and authority, and claims of injustice typically reflect abuses of power or authority. In this respect, justice pertains to the rightness or wrongness of an action or set of actions, and social and political justice and injustice involve political agents or those with significant power and authority within a society.

Further, concerns of justice investigate the justification for certain actions, meaning that the reasons that agents give for treating others unfairly or seemingly wrongly are important for evaluating their actions. This is particularly true when state actions single out particular groups for different forms of treatment. For example, we consider it unjust that the US at one point restricted the right to vote to white males, but we are considerably less troubled by the fact that children are not given this same right. Part of the explanation for this difference lies in the fact that there is a compelling interest, that most citizens will accept, in extending universal suffrage to all adults, but

⁷ Obviously, distributive justice is not the only, or even the most important, aspect of justice. There are also things like retributive justice, procedural justice, restorative justice. However, it is an aspect of justice in which governments and societies are frequently implicated.

not to children, who may not be familiar with the workings of the democratic system or intellectually developed enough to participate. Because we can justify the exclusion of children based on reasons that serve the state's purpose (and perhaps the goals of justice itself) and do not violate valued social norms, such circumstances appear not unjust. However, when women were excluded from voting, making the argument that there was a legitimate justification for their exclusion was much more challenging. While it may not have violated a social norm, it is hard to imagine that providing women with the right to vote was somehow contrary to the interest of the government that was intended to represent them.⁸

Lastly, a diagnosis of injustice seems appropriate only if the ill or injury might have been prevented. This means that not just any bad outcome should be called unjust.⁹ For example, the fact of Hurricane Katrina destroying significant portions of New Orleans in 2006 would not itself present an injustice. However, if it were shown that a considerable quantity of the damage could have been avoided with improved protective measures, or that social disparities led to greater harms for parts of the population than others, there would certainly be a cause for thinking it an injustice.

I do not take these three criteria to express the full range of what is required for diagnosing or understanding an injustice but as rough guides for thinking about the

⁸ This is frequently tricky to figure out, as what counts as appropriate justification might seem to be culturally or historically determined in ways that appear troubling. Thus, the fact that many US citizens, prior to ratification of the 14th Amendment, might have found the exclusion of African Americans from voting unproblematic should give us some cause for worry, as it indicates that what counts as a legitimate state interest may vary given the cultural climate at a particular moment.

⁹ Although I am speaking here about actions, we can also pass moral judgments on failures to act under certain circumstances. Thus, if a government fails to intervene in a case where persons are clearly being harmed, this might also constitute an injustice.

questions we should ask in determining whether issues of justice should be raised. On the theoretical side, much of the philosophical study of justice can be seen as having three distinct, yet related, goals. First, work on justice seeks to provide a definition of what justice itself is, by identifying the parameters within which discussing justice is important, what the demands of justice are, and how those demands relate to the experiences of individual persons, states, or political and social institutions. Second, identifying what justice requires should enable us to diagnose injustices or circumstances that depart from justice. Finally, a theory of justice should provide guidance for preventing or addressing departures from justice and alleviating the circumstances of those who have faced significant injustices. While not every notion of justice will explicitly (or even implicitly,) address each of these goals, together they give form to our understanding of justice, especially as it plays out in social and political settings. Ultimately, justice makes demands on us, and an adequate theory needs to explain these, determine those settings in which they are met, and offer guidance for achieving compliance in cases where they are not.

Given this general understanding, the goal of this dissertation is to offer a diagnosis, grounded in justice, of the challenges presented by environmental inequities, and then to offer a model for addressing those challenges. One easy, and rather callous, response to the circumstances of persons whose lives are affected by a multitude of environmental hazards might be to suggest that such persons simply move to locations where they won't face such dangers. This facile response is based on assumptions about alternatives that are frequently unavailable for residents of EJ (environmental justice)

communities.¹⁰ Relocating requires financial resources and social mobility, both of which residents of EJ communities are unlikely to possess. Since the populations we're discussing are typically of lower socio-economic status, moving to another area may also be challenging because other locations areas are equally inhospitable. Race can also play a role, as there continues to be a degree of discrimination in housing, and not all communities welcome people of color. And, as I will note later, people frequently develop strong ties to their communities, and may be hesitant to leave the homes where they raised their families. Lastly, we must ask why the onus to improve circumstances is placed on those affected instead of those who make decisions about where hazardous facilities are located.

Challenges confronted by people living in EJ communities do not have quick or easy fixes. We cannot isolate individual and community health from the social and economic factors. It is the complexity of the challenges present that makes such communities interesting from a philosophical perspective, and challenging from a public policy perspective. While philosophers enjoy breaking problems into their component parts in order to view each of them in its most pristine state, such cannot be our response if we want to provide an adequate response to the questions presented by profound environmental injustices. Finding ways to untangle these complexities is necessary, but must be done with a respect for the fact that their interconnectedness is fundamental to understanding and addressing them.

¹⁰ I will return to the idea of the "EJ community" in the following chapter, and provide a much more careful sketch of how we should think about these communities.

It is my goal to provide a philosophically robust analysis of these complexities. Theorizing about justice takes a variety of forms, and in the following chapters I will present the ideas of two prominent writers who have been working on these issues over the past half century. John Rawls and Amartya Sen are both part of a long tradition of thinking about justice, but they reflect very different currents in thinking about its goals. Rawls is firmly situated within the constructivist tradition and takes the project of theorizing about justice to be one of creating a perfectly just state, or the circumstances that would allow for the creation of a perfectly just state. Sen, on the other hand, works within what he calls the “comparative” tradition, where the goal is not perfect justice, but the alleviation of injustice.

While there are significant similarities in the two theories, beginning with different goals and presuppositions leads Rawls and Sen to conclusions offering different guidance for achieving justice. Because they focus on different aspects of justice, each provides guidance for a different aspect of the project, and these can serve as complementary. Although much scholarly and activist work that focuses on environmental justice has been published in recent decades, a sustained philosophical analysis has not yet been provided. It is my ultimate goal to offer such a philosophical analysis, and from this analysis to provide practically minded suggestions for responding to environmental injustices, that take (at least some of) the multitudinous aspects of environmental injustice into account.

To accomplish these goals, I begin, in Chapter 2, by outlining the issues associated with environmental justice, giving a brief sketch of the movement, the kinds of

environmental hazards individuals and communities face, and the harms (health and social) they experience. I also focus on the specific philosophical issues that environmental injustices present, by pointing out both what makes it “environmental”, and not merely social injustice, as well as why we call these circumstances unjust.

Chapter 3 outlines the empirical research I’ve completed over the past two years. First, I offer some reflections on my experience working with the Center for Community Action and Environmental Justice, and then I address what I’ve learned in interactions with agency representatives, policy-makers, and scientists. Together, these aspects of my research have given me a better understanding of what residents of impacted communities would consider positive responses to environmental injustices, as well as the kinds of solutions that are politically or scientifically feasible.

Chapter 4 provides a description of a “representative” community to aid in identifying the injustices specific to environmentally impacted communities and how we might address them. This encompasses both those challenges that are shared by many socio-economically challenged communities, as well as what characteristics are particular to EJ communities, and will guide later chapters.

Chapter 5 provides a general overview of John Rawls’s project of “Justice as Fairness”, and its potential application to questions of environmental injustice. In particular, I focus here on Norman Daniels’s extension of the Rawls’s Fair Equality of Opportunity Principle to discuss health, and the way that challenges to health (like those associated with environmental exposures) can severely limit opportunity.

In Chapter 6, I provide a Rawlsian analysis of political personhood through a discussion of the two moral powers. Next, I focus on the primary good Rawls calls the “social bases of self-respect”, and show how it is challenged in impacted communities, to disastrous effect. The goal of this chapter is to provide a diagnosis, and gesture toward some general solutions. The full-fledged solutions are presented in a later chapter.

Chapter 7 focuses on Amartya Sen, who views the analysis of justice as a comparative activity linked to potential and achievement, with a focus on capability sets and what individuals can achieve. Fundamental to the Senian notion of justice is the idea that we should understand justice in terms of the quality of individual human lives, and that we should evaluate these lives on the basis of what people can “do and be”.

Chapter 8 provides a Senian diagnosis of the experiences of residents of heavily impacted communities. This is achieved particularly by addressing concerns of well-being, by looking at what residents of such communities can do and achieve, with a focus on health and basic functioning.

In Chapter 9, I lay out the structure of my theoretical model. I begin with a general idea of justice, and then, taking guidance from both Rawls and Sen, I develop a 3-pronged approach for both preventing and redressing harms. Additionally, I offer a brief discussion of individual responsibility for health, and the role it should play in our discussion of the negative health outcomes associated with exposures to environmental hazards.

Chapter 10 offers the substantive model. The first strategy is preventative, and because it focuses on actions at the level of institutions, is heavily influenced by Rawls.

The best way to address injustices is by creating background conditions of justice that will prevent unjust distributions of goods and harms, while providing avenues for greater public engagement. Second is the restorative arm of the project, focused on returning harmed individuals to a pre-harm state, or providing some form of compensation. This can involve financial support, aiding in relocation, providing greater health care, and a variety of other options. Third are what I call mitigative strategies, aimed at the worst cases, where the best possible scenario involves stopping further harms, because restorative justice presents too great a challenge. While Rawls can continue to offer guidance regarding the appropriate institutional structures that will be required to better serve the goals of justice, the Senian notion of comparative justice will play a larger role in the two later strategies, as his view presents means for thinking about how to improve the lives of people in cases where perfect justice is simply not feasible.

Chapter 11 concludes the work, offering an overview of what has been shown, and gesturing toward some of the long-term goals that philosophers writing about environmental justice might have. While this work has focused on the domestic case, extending such a project to the global scale seems both important and necessary, and I offer a few comments on this in closing.

2. What is Environmental Justice?

While environmental hazards of one form or another affect every person in the United States,¹¹ discussions of environmental justice are concerned with those who face the greatest challenges. Although we all face risk, some persons and communities are forced to live with significantly higher than average concentrations of environmental hazards, as well as the associated risks to human health. It is this disparity in degrees of exposure that creates the feeling of injustice. While the fact that anyone is exposed to certain harmful substances may give cause for concern, the greatest source of worry is that both exposures and effects are higher among certain populations, particularly for low-income persons of color. Discovering and addressing the mechanisms at play behind these disparities is one of the primary goals of persons working in environmental justice.

Definitions

Colloquially, the term environmental justice centers on the basic notion that it is fundamentally unjust for certain communities and persons to bear disproportionately the environmental burdens associated with living in a highly industrialized commercial society. The Environmental Protection Agency defines the goals of environmental justice as:

¹¹ For example, everyone currently living in the US is likely contaminated by some hazardous chemical substances absorbed through food consumption, exposure to polluted air created by industry or traffic, or through exposures at work or in their homes.

the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation. *It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.*¹²

This approach provides a very broad reading of environmental justice, incorporating social and political considerations that are of special importance to low-income communities. Thus, the EPA recognizes that health, and the regulatory measures put in place to better preserve health, are not the only issues environmental justice must address, but that justice requires self-determination and a sense that one can control certain aspects of one's life, as well as political and social empowerment, for residents of impacted communities.

As an alternative, the following description is provided by the Community Center for Action and Environmental Justice, centered in Jurupa Valley, CA. Here, social conditions play an even more fundamental role.

Environmental Justice is the confluence of social and environmental movements, dealing with the inequitable environmental burden born by groups such as racial minorities, women, poor, or residents of developing nations. Environmental Justice seeks to redress inequitable distributions of environmental burdens (pollution, industrial facilities, crime, etc.) and access to environmental goods (nutritious food, clean air & water, parks, recreation, health care, education, transportation, safe jobs, etc.) in a

¹² US Environmental Protection Agency, "Environmental Justice," <http://www.epa.gov/oecaerth/environmentaljustice>. Italics are the author's.

variety of situations. Self-determination and participation in decision making are key components.¹³

While similar, this view is more community-oriented, and directed at the distribution of goods as well as harms. This is key, as health and well-being are determined not solely by the avoidance of hazards, but by access to goods and activities that serve to promote them.

Environmental equity and inequity are at the heart of discussions of environmental justice. In discussing environmental inequities, what concerns scholars and activists is there seems to be a pattern, according to which “hazardous waste sites, polluting industries, nuclear waste dumps, and other environmental threats are more likely to be located within or adjacent to communities of color or poor communities.”¹⁴ Discussions of equity typically focus on the distribution of risks, but not specific community or individual health outcomes or the circumstances in which people live. Critical for thinking about environmental justice is that current distributions are inequitable, and that these inequities seem to track socio-economic status and race.

Following on concerns of environmental inequity is “environmental racism”, a term coined by former NAACP Executive Director Benjamin Chavis, and popularized by Robert D. Bullard. The term suggests that the underlying causes of environmental inequity involve pervasive racist attitudes, and that communities with large percentages

¹³ Center for Community Action and Environmental Justice, "Environmental Justice Intervention and Revitalization Program," ed. Center for Community Action and Environmental Justice (2009), 1.

¹⁴ David E. Newton, *Environmental Justice : A Reference Handbook*, 2nd ed., Contemporary World Issues (Santa Barbara, Calif.: ABC-CLIO, 2009), 3.

of people of color are frequently targeted as sites for the disposal of toxic substances and other hazardous facilities. Alternatively, the term “environmental discrimination” does not directly attribute the inequities to racist motivations, but to discriminatory practices motivated by socio-economic status, status as an immigrant, or other features that might distinguish a group of persons.¹⁵

A basic concern of environmental justice is health, and what it means to be a healthy person or a healthy community. However, EJ activists frequently use an idea of good health that encompasses much more than simply the absence of disease. This broader view encapsulates physical health, psychological health, and social acceptedness or integration.¹⁶ Health is an important factor in determining economic success, and low socio-economic status is frequently linked to poor health, leading to generational poverty. By looking at the health status of whole communities, we should examine both aggregate health, as well as the health problems that individual persons face.

History

The contemporary debate regarding environmental justice is often thought to have begun in 1978, when Lois Gibbs started a community effort in the Love Canal neighborhood of Niagara Falls, NY, after discovering that the area where she and her neighbors lived was constructed on the site of a toxic waste dump. Because of their political action, residents of the Love Canal area forced the creation of the Superfund

¹⁵ Ibid., 3-4.

¹⁶ And is shared by bodies like the World Health Organization, which takes seriously the idea that health is much more than the absence of disease.
See: World Health Organization, "World Health Organization," <http://www.who.int/en/>.

legislation, which is designed to clean up heavily contaminated areas. This legislation provided financial support from the federal government to help clean up extremely contaminated sites.

However, Gibbs and the other Love Canal residents were not alone in their struggle, and since that time groups of community activists have appeared all across the US. This has led to considerable media attention, as well as scholarly research aimed at better understanding the distributions of hazards and the circumstances of those in environmentally distressed areas. Additionally, government agencies have become much more active in Environmental Justice issues, including President Clinton's 1994 Executive Order on Environmental Justice¹⁷ and the EPA's creation of a department whose sole purpose is addressing EJ issues.

Importantly, while Gibbs was one of the movement's earliest activists and is still one of its more prominent, the community in which she made her home was predominantly white, differentiating it from many of the communities that face environmental risks. While environmental health concerns are not limited to communities of color, we most typically think of environmentally impacted communities as those where a large percentage of the residents are persons of color, and generally of low socio-economic status. This is largely because poor communities of color bear the greatest burden of the multitudinous environmental health hazards, as I will show in the following sections. Addressing this issue of disparate impact is one of the primary goals of the environmental justice movement.

¹⁷ William J. Clinton, "Executive Order 12,898," (1994).

What makes a community an “EJ Community”?

Typically, communities facing the exposures and challenges under discussion here are known as EJ (environmental justice) communities. Such communities are subject to a variety of hazards, including not only the chemical impacts created by industry, commerce, and other local sources, but also mobile sources of pollution, like emissions from vehicle, train, and truck traffic, as well as exposures that occur in the home and the workplace. Important too are the social factors that can influence the quality of life of persons in impacted communities, including limited access to good health care, limited access to nutritious food, high rates of drug and alcohol abuse, limited access to stable, well-paying employment, political and social marginalization, and other challenges. With the coupling of environmental and social challenges, the problems EJ communities must confront are extraordinarily varied and complex.

To illustrate, imagine a healthy community, where the air is free from toxicants, the water is potable, the residents have access to well-paying jobs, healthful food, good medical care, recreational space, and adequate schooling. If a polluting industry (for example, a waste management facility) moves into such a community, it may create some problems for those in close proximity to the facility, but will affect the overall quality of life of those in the community by only a marginal amount, and is unlikely to seriously impact health.¹⁸ Even a number of such facilities may not cause significant problems, as

¹⁸ Provided that it abides by federal, state, and local regulations with regard to emissions of hazardous substances, and that these regulations are adequately health protective.

the social infrastructure can respond to resulting health and other problems. At some point, the addition of ever more environmentally hazardous facilities will have negative results, but the other strengths of the community (medical care, financial stability) may be able to mitigate these challenges.¹⁹

On the other hand, imagine a community that lacks a strong social infrastructure. In this community, jobs, medical care, recreational space, and healthful food options are limited, and schooling is less than adequate. When a hazardous facility moves into such a community, the challenges for residents are much worse, particularly as they don't possess the resources to acquire good preventative medical care, and are thus more susceptible to assaults from outside sources. With the addition of new hazards there are greater challenges, resulting in negative health outcomes and further stretching meager resources.

The typical EJ community is more like the second example, and likely faces multiple insults to health from a variety of sources, including, but not limited to: multiple sources of air pollution, like industrial manufacturing facilities, which can emit heavy metals and other particulate matter, and also create truck traffic due to the need to transport goods and machinery, which release diesel exhaust. There are multiple sources of water pollution, like distribution centers where fuel and other contaminants leak onto the ground and are washed into streets and storm drains, eventually finding their way into bodies of water. And finally, multiple sources of ground pollution, created by residue from manufacturing or previous pesticide use. In some cases, while an individual hazard

¹⁹ Through certainly the character of the community would change at some point.

might, by itself, not provide any considerable harm, the combination of many hazards likely will.

South Camden, NJ

An examination of an existing EJ community will help to clarify our understanding. South Camden, NJ is illustrative of many of the challenges faced by EJ communities, as well as the legal avenues available to activists seeking to protect the health of their communities. The Waterfront South neighborhood of South Camden was involved in a court case resulting from the New Jersey Department of Environmental Protection's (NJDEP) 2000 decision to grant a permit for the construction of cement processing facility in that community. Judge Orlofsky's District Court opinion²⁰ provides a thoughtful presentation of some extremely challenging issues, and the circumstances of the case give a clear view of some of the most pressing environmental concerns.

Camden is one of the poorest cities in the nation, with over 50% of the adult population unemployed in 2000.²¹ At the time of the facility's proposal, 63% of the residents of Waterfront South were African American and 28.3% were Hispanic, while 41% of the total population was under the age of 18.²² When the Saint Lawrence Cement Co. (SLC) decided to site a new facility there, the Waterfront South neighborhood was

²⁰ "South Camden Citizens in Action V. New Jersey Department of Environmental Protection," in *145 F.Supp.2d 446* (Thomson West).

²¹ US Census Bureau, "U.S. Census Factfinder," (2000). (last visited 1/25/2010)
Currently, New Jersey is home to more Superfund sites than any other state. Cuts to the EPA from the 2010 budget have resulted in a 1% decrease in moneys allotted to the Superfund cleanup program. However, an additional \$18 million has been allotted for compliance and assurance, some of which will go to identifying and addressing current environmental health concerns. Joe Tyrrell, "Proposed Budget for U.S. EPA Trimmed by \$300 Million " *NewJerseyNewsroom*, February 1 2010.

²² "South Camden Citizens in Action V. New Jersey Department of Environmental Protection," 12.

home to a number of industrial facilities, including a municipal trash authority, a sewage treatment plant, a resource recovery facility, a trash-to-steam plant, a power plant, and a co-generation plant, as well as two locations designated as Superfund sites by the US EPA. Four locations within ½ mile of the proposed site were already under investigation by the EPA for “possible release of hazardous substances,” and another 15 sites in the area were known to be contaminated.²³

The health status of Waterfront South’s residents is perhaps even more distressing. A consultant for the SLC filed a report finding that the age-adjusted cancer rate for black females in Camden County was higher than 90% of the rest of the state, and this same rate was higher than 70% of the rest of the state for black males, while Camden County’s black females had a rate of death from asthma 3 times that of their white counterparts, and black males had a rate that was 6 times that of their white counterparts. 61% of residents of the Waterfront South District reported difficulty catching their breath and frequent coughing,²⁴ and 48% reported tightness in their chests, numbers over twice those reported for residents in other parts of the city of Camden. Overall, the self-reported asthma rates in the community were twice that found in the rest of the city.²⁵

The plight of these citizens was made public when a community group known as “South Camden Citizens in Action” (SCCIA) sued the NJDEP to prevent SLC from

²³ Ibid.

²⁴ Compared to 35% in other areas of the county. (Olga Pomar, "Toxic Racism on the New Jersey Waterfront," in *The Quest for Environmental Justice: Human Rights and the Politics of Pollution*, ed. Robert D. Bullard (San Francisco: Sierra Club Books, 2005), 129.)

²⁵ "South Camden Citizens in Action V. New Jersey Department of Environmental Protection." Importantly, this does not necessarily show that that exposures were the cause, but it certainly tells us that the population was especially susceptible to environmental assaults.

building and operating the permitted facility. The facility would grind cement, releasing further particulate matter into the air in an area where many residents already reported respiratory problems. Additionally, the existence of the plant would result in increased truck and other traffic in the neighborhood, thereby raising levels of diesel exhaust, creating noise pollution, damaging streets, and endangering pedestrians.

SCCIA's original complaint was based on a claim of discriminatory practices, because the population affected by the new facility was primarily African American and Latino/a. To this end, the group sued for violations of Title VI of the 1964 Civil Rights Act, the Fair Housing Act, and the Equal Protection Clause of the US Constitution's Fourteenth Amendment. This proved difficult, as showing discrimination requires that the plaintiff show the defendant's actions to have been intentionally discriminatory, which is extremely difficult to accomplish.²⁶

SCCIA's suit was motivated in part by the NJDEP's failure to consider the existing pollution from other sources in making its determination about the impact from the proposed facility. Essentially, the NJDEP made their permitting decision under the assumption that the community was a healthy or pristine community, and that the cement processing plant would be the only hazardous facility (particularly with regard to airborne emissions) in the area. Such was most certainly not the case, as the neighborhood was

²⁶ Plaintiffs are frequently able to show that certain policy or zoning decisions resulted in disparate impact, where certain groups confront the bulk of harms while others remain relatively unscathed. However, disparate impact is not really enough to show intent, because it only tells us something about the outcome, but not the motivations for the decision resulting in that outcome. I will return to some of these concerns in the following chapter.

home to a great number of polluting facilities, which were already believed to have harmed residents' health.

Judge Orlofsky granted SCCIA's injunction, ordering SLC to halt construction of the facility pending a full environmental impact analysis. In his discussion of the case, Orlofsky assessed the ethnic composition of the community and considered the overall health of the community and existing levels of pollution. He noted that while emissions from the proposed facility would fall under the standard determined by the Clean Air Act, the real issue was whether the cumulative (total) emissions would fall within that same boundary.²⁷ What is most important about Orlofsky's decision is his focus on a much broader range of concerns than the NJDEP had originally considered.

Ultimately, SCCIA was unable to stop the construction and operation of the facility. Despite Orlofsky's injunction and later opinion stating that the SCCIA had grounds to sue under the Civil Rights Act, the Third Circuit Court overturned his decision on unrelated grounds in 2001.²⁸ However, the case illustrates some of the most salient factors differentiating EJ communities from other communities, and the particular hoops through which activists are required to jump in order to achieve justice.

²⁷ See generally: "South Camden Citizens in Action V. New Jersey Department of Environmental Protection."

²⁸ Pomar, "Toxic Racism on the New Jersey Waterfront," 134-35. Interestingly, Orlofsky's rulings came out at nearly the same time that the Supreme Court decided that private citizens did not possess the right to bring suit under the Title VI. (See "Toxic Racism on the New Jersey Waterfront" for further elaboration of this issue.) Likely, this impacted the Third Circuit Court's decision to overturn Orlofsky's injunction, as it suggested that individual person could not bring the type of suit that SCCIA had brought against the NJDEP.

Inequities in Distribution

The Waterfront South community shares much in common with other EJ communities, insofar as there are multiple sources of pollution affecting a population with a high percentage of persons of color who are largely of low socio-economic status. In his groundbreaking study *Dumping in Dixie*, Robert Bullard argues that the mainstream environmental movement has largely left the concerns of environmentally impacted communities of color unaddressed. While the growth of the Not In My Backyard (NIMBY) movement²⁹ worked for middle class white communities, environmentalists have been unconcerned with hazardous facilities already existing in communities of color. As he has suggested, it is much easier to fight against a proposed facility than one that is already operating.³⁰ Further, when middle class white communities succeed in preventing locally unwanted land uses (LULUs)³¹ from being sited in their communities, this does not mean that the facilities will never be constructed, but that they will simply be placed in other communities, most likely communities without the political and financial resources required to prevent their construction. Bullard has referred to this dangerous side of NIMBY as PIBBY (Put In Blacks

²⁹ NIMBY is the rallying cry for many environmental activists who refused to watch their communities become home to facilities that would disrupt the aesthetic or financial value of their property, or would lead to negative health outcomes.

³⁰ Robert D. Bullard, *Dumping in Dixie : Race, Class, and Environmental Quality*, 2nd ed. (Boulder: Westview Press, 1994), 109.

³¹ These are any facilities that the community would not desire, including waste dumps and storage facilities, refineries, pollution-producing industrial centers, railyards, ports, etc... The general heading can also include facilities that aren't clearly environmental hazards, like prisons, halfway houses, and other treatment facilities, but I will be focusing on those facilities that present environmental hazards to human health.

Backyards),³² though certainly such actions affect persons of color from many different ethnic backgrounds. This concern cuts to the heart of some of the most potent EJ issues. If the dangers presented by industrialized society are necessary, it seems that they shouldn't be distributed inequitably. The alternative is to find some totally new way of producing and distributing goods. However, rethinking the methods of production and transport in the US is a large and much different project, as my goal here is to take the world as it is given to me, and seek to find ways to improve peoples' lives.

Race and class are thought to play a significant role in discussions of environmental inequities. It is fairly uncontroversial that the populations most likely to be affected by proximity to LULUs will not be comprised primarily of upper class, well-educated, white families. Developers are generally concerned with profit and prefer to site industrial facilities in areas where land costs are low. Land costs tend to be lower in communities with residents of low socio-economic status, and low socio-economic status tends to track race, with people of color being much more likely to be in the lower strata.

Whether a community possesses the political capital to affect the decisions made by government officials and representatives of commerce and industry also plays a substantial role. Commercial industries tend to target disenfranchised communities when making decisions about where to place hazardous facilities, as those communities are less likely to create costly and time-consuming barriers to siting decisions. In a rather

³² Another side of this is the environmental response to the usage of persistent chemicals in pesticides and herbicides. While DDT and its ilk are no longer legal in the US, the newer substances used to protect crops linger long enough to affect the farmworkers who are in the fields. While these new chemicals may only have acute affects, they can still be harmful to those exposed to them, and these tend to be low-income laborers, and not infrequently, people of color.

infamous example, the Los Angeles based political consulting firm Cerrell and Associates was commissioned by the California Waste Management Board to study where to site waste incinerators. In what is now known as “the Cerrell Report”, the firm concluded that “political criteria have become every bit as important...as engineering factors,” and suggested that companies should look for small, low income, rural communities whose residents had a high school education or less, ideally located in areas with heavy industry. Further, the report noted that Catholics presented especially good targets.³³ I should note that much of the Catholic population in California is of Mexican descent. While this report was written to address the siting of a particular form of industry, its general claims are indicative of trends that continue to be prevalent in siting and zoning decisions. Despite some successes, the report notes that “middle-income, affluent, and better educated communities are better equipped to wage effective opposition campaigns...”³⁴ Fear of resistance from community members still represents a compelling reason for developers to site in alternative locations.

There has been substantial empirical research suggesting that zoning and siting decisions disfavor communities where the population is comprised largely of people of

³³ J. Stephen Powell, "Political Difficulties Facing Waste-to-Energy Conversion Plant Siting," (Los Angeles, CA: Cerrell Associates, Inc, 1984), 11-18, 52.

This report was first uncovered by Lois Gibbs in her fight to get government recognition of the harms facing the residents of the Love Canal neighborhood of Niagara Falls, NY.

³⁴ Robin Saha and Paul Mohai, "Explaining Racial and Socioeconomic Disparities in the Location of Locally Unwanted Land Uses: A Conceptual Framework," in *Environmental Justice: Law, Policy & Regulation*, ed. Clifford Rechtschaffen, Eileen Guana, and Catherine A. O'Neil (Durham, NC: Carolina Academic Press, 1997), 82.

color. Beginning with Bullard's research in the early 1980's³⁵ and the United Church of Christ's report from the Committee for Racial Justice in 1987, numerous studies have shown that LULUs are much more prevalent in communities of color than in predominantly white communities, even when accounting for differences in class and income. Among other things, the UCC report found that people of color are twice as likely to live near waste sites, that the average incomes of residents of communities with waste sites was lower than the average incomes of residents of communities without waste sites, that 3/5 of the US's largest hazardous waste sites are located in communities whose residents are primarily African American or Latino. Ultimately, the report suggested that race is a more reliable predictor of the presence of a waste site than income.³⁶

There is also evidence suggesting that there are disparities in how federal and state agencies handle enforcement and cleanup. In the early 1990's, a report published in the National Law Review showed that the penalties for infractions of environmental laws were lower in poor and predominantly minority communities, that agencies took longer

³⁵ Starting with *Dumping in Dixie*, and continuing with *Unequal Protection*, and a number of articles and edited volumes.

³⁶ See generally: Commission For Racial Justice, "Toxic Wastes and Race in the United States: A National Report on the Racial and Socio-Economic Characteristics Fo Communities with Hazardous Waste Sites," (New York, NY: United Church of Christ, 1987).

It must be acknowledged that there is a body of literature disputing the charge that communities with significant populations of people of color are more likely to house LULUs. Much of the debate centers on the unit of measurement utilized in studies designed to analyze whether certain types of communities are more likely to be targeted for environmental hazards. Studies have used zip codes, census tracts, or concentric circles emanating from sites. There isn't a consensus view regarding which methodology is the most accurate, and this is not an issue that I am either qualified or prepared to settle. For an overview of these issues see: Clifford Rechtschaffen, Eileen Gauna, and Catherine A. O'Neil, eds., *Environmental Justice: Law, Policy & Regulation*, 2 ed. (Durham, NC: Carolina Academic Press, 2009), Chapter 2.

to respond to abandoned waste sites in these communities, and that the agencies used less effective measures to address the dangers such sites presented.³⁷ Thus, inequities may persist even when brought to the attention of authorities.

Inequities also exist at the level of health achievement, and not merely exposure. Bullard cites evidence showing that the age-adjusted mortality rate for people between the ages of 5 and 34 is five times higher among African Americans than it is for white Americans, and that asthma rates are 26% higher for African American children than for white children. Further, childhood lead poisoning, which can have disastrous long-term effects, occurs at twice the rate among African American populations that it does among whites.³⁸ Research has also shown increased levels of lead poisoning among Mexican-American children.³⁹

Beyond detriments to physical health, environmental injustices can take a toll on the emotional and psychological well-being of persons and communities. In particular a sense of value and self-respect are intimately linked to the way one is treated by others. As Charles Streadit of Houston's heavily impacted Northwood Manor neighborhood told Bullard: "It's hard enough for blacks to scrape and save enough money to buy a home, then you see your dream shattered by a garbage dump. That's a dirty trick. No amount of

³⁷ See Marianne Lavelle and Marcia Coyle, "Unequal Protection: The Racial Divide in Environmental Law," *National Law Journal* 15, no. 3 (1992).

³⁸ Robert D. Bullard, "Environmental Justice Challenges at Home and Abroad," in *Global Ethics and Environment*, ed. Nicholas Low (London/New York: Routledge, 1999), 35-36.

³⁹ See: Olivia Carter-Pokras et al., "Blood Lead Levels of 4-11-Year-Old Mexican American, Puerto Rican, and Cuban Children," *Public Health Reports* 105, no. 4 (1990).

money can buy self-respect.”⁴⁰ As Streadit suggests, the victims of such zoning decisions are often people who have already faced difficult odds in achieving the successes they have, and disruptions of these hard-won gains can have significant negative impacts.⁴¹

With challenges to the self-image can come feelings of hopelessness and helplessness. Living with environmental hazards, and lacking the support of outside agencies can leave persons and communities with the sense that there is nothing to be done to stave off the inevitable arrival of more hazards and the accompanying threats to health. Maria Birrueta, a resident of a heavily polluted community in West Side San Bernardino, expressed her fears by drawing a map of the residences on her block. In every second house, someone has died from cancer and given the position of her own home, she is worried that she may be next.⁴² While there is an element of the tongue-in-cheek to Birrueta’s statement, it is an expression of the inevitability with which environmental hazards are faced in EJ communities.

The possible economic benefits of allowing a commercial, industrial, or waste facility into a community should be acknowledged. Low-income communities where job opportunities are few may welcome hazardous facilities in the hope that they will provide

⁴⁰ This will be interesting to think about in light of my later discussion of John Rawls and self-respect. Robert D. Bullard, *Unequal Protection : Environmental Justice and Communities of Color* (San Francisco: Sierra Club Books, 1994), 5. (Taken from Bullard’s interview with Charles Streadit, president of the Houston Northeast Community Action Group, May 30, 1988.)

⁴¹ Mira Loma, CA, has the largest concentration of warehouse space in the nation, and though many currently sit empty, there are plans to construct significant numbers of new facilities in the coming years. The warehouses sit a mere number of feet from the backyards of residents, and totally block views of the surrounding area. While the diesel trucks that idle near the facilities spew fumes into the air, the mere existence of the facilities in such close proximity to residential neighborhoods sends a very clear message to the residents about how much they are valued by those with the power to make decisions.

⁴² Maria Burrietta, April 19, 2010.

employment and add to the local tax base. In many cases, communities may not have other options for job creation or community development, and such facilities appear as the best available option.⁴³ The fact that such communities are presented with the choice between an unappealing status quo and some minor financial gains may itself present an injustice.⁴⁴ As Bullard so aptly asks: “should society pay those who are less fortunate to accept risks that others can afford to escape?”⁴⁵ While compensating a community for allowing a hazardous site may make hazards more appealing, residents rarely have other options, and may for this reason feel compelled to acquiesce.

Another worry is that the promises made by developers may not be kept, and communities that take on potentially hazardous facilities in return for social and economic benefits may not ultimately see those benefits materialize.⁴⁶ Frequently, the jobs provided by LULUs are low-paying, offer few benefits, and may not be permanent.⁴⁷

⁴³ Lynn E. Blais writes: “For predominantly poor and/or minority communities, there may be no excess revenue to accommodate offers of tax breaks, or any other carrots to dangle before the desired industry. These communities can trade only what they have, and many have offered the willingness to accept risk.” (Lynn E. Blais, “Environmental Racism Reconsidered,” *North Carolina Law Review* 75(2002): 105.

⁴⁴ I will discuss in a later chapter the role that freedom of choice between options that are seen as truly viable plays in the way we should evaluate the justice of particular situation.

⁴⁵ Bullard, *Dumping in Dixie : Race, Class, and Environmental Quality*, 85.

⁴⁶ Robert D. Bullard has written extensively on this problem in various publications over the years. In his research for *Dumping in Dixie*, he found that community residents were overwhelmingly disappointed with the compensation they received for allowing hazardous facilities into their communities. There is also an interesting issue here regarding the rights of future generations, as the children born into the community will not have the opportunity to make informed decisions regarding the siting of facilities in the way their parents did.

⁴⁷ The warehousing in Mira Loma, CA is a good example of how such developments may not aid a community, as many of the job opportunities created by the warehouses pay very little, and since the employees are hired only on a temporary basis, they receive no benefits and no assurance of long-term employment. Additionally, the warehousing is not even air-conditioned, so employees face rather horrifying working conditions on hot summer days. It is my understanding that OSHA is currently investigating conditions at a number of facilities in this area.

Additionally, while a hazardous facility may provide significant benefits to its owners, these may not be shared by those who face the hazards.⁴⁸ Thus, while the potential trade-offs might seem acceptable in the short term, the long term benefits may not appear, and whether or not they do, residents are still saddled with the hazards brought by industrial and commercial development.

Hazards to Health

Thus far, my discussion of environmental hazards has been very general, and it will help to discuss the specific hazards, and associated health effects, that EJ communities confront. While what follows is far from an exhaustive list, it provides some substance for discussion, and will help to guide later chapters.

From Hazards to Risks to Harms

To describe what happens when humans or animals come into contact with toxic substances⁴⁹, toxicologists distinguish between hazards, risks, and harms. A hazard or hazardous substance is a substance that has been found to have “intrinsic toxic properties”,⁵⁰ meaning that exposures are known to have adverse affects at certain

⁴⁸ The distribution of harms and benefits is at the heart of the environmental justice movement, and one of the main concerns for activists is that poor communities see all the dangers of industrial and commercial development, without reaping the benefits.

⁴⁹ As an important definitional point, naturally occurring toxic substances are referred to as “toxins”, while those resulting from human activity are known as “toxicants”.

⁵⁰ Elaine M. Faustman and Gilbert S. Omenn, "Risk Assessment," in *Casarett and Doull's Toxicology: The Basic Science of Poisons*, ed. Louis J. Casarett and Curtiss D. Klaassen (New York, NY: McGraw Hill Medical, 2008), 108.

dosages.⁵¹ For example, if a person lives near a hazardous facility, like a coal-burning power plant, but is never actually exposed to SO₂, NO_x, or Particulate Matter, all of which are associated with negative health outcomes, she is not “at risk” because she has not faced any exposures.⁵²

Risk is defined as “the probability of an adverse outcome based upon the exposure and potency of the hazardous agent(s)”.⁵³ Essentially, we have an exposure to something with toxic properties (the presence of a hazard, plus contact with that hazard). Risk and the characterization, assessment and management of risk take into consideration dosage, duration, type, and frequency of exposure, and susceptibility.⁵⁴ Using the coal-burning power plant example, if any of the hazardous substances mentioned above actually reached persons in the surrounding area, this would constitute a risk to health. The actual nature of the risk would be determined by what the substance was, the quantity, and route of exposure.⁵⁵ Risk can be assessed through animal assays, clinical trials, and epidemiological studies, which aim to show the likelihood of negative health outcomes at different exposure levels.

⁵¹ Dose here is understood in terms of the quantity of substance to which the subject is exposed.

⁵² I will discuss these particular substances in detail later in this chapter.

⁵³ Faustman and Omenn, "Risk Assessment," 108.

⁵⁴ Risk assessment and risk characterization differ insofar as risk assessment is thought to be a purely quantitative endeavor, while risk characterization is meant to take into account qualitative aspects of an individual or community that can affect susceptibility and change conceptualization of risk.

⁵⁵ The route of entry into the body. Substances can infiltrate the body and have different effects when they are ingested vs. when they are inhaled or absorbed through dermal exposures. For someone to be considered exposed, a substance must actually enter the body. Thus, the hazmat team who clean up a contaminated area will only be considered exposed if the substance causing the contamination makes its way into their bodies.

A harm is conceived as an actual exposure that has led to some physical damage to an individual human or human population. Thus, if a person was exposed to SO₂, and developed respiratory problems, this would count as a harm. Unlike hazards and risks, harm may be somewhat qualitative. In cases where there are easy tests to determine whether a subject has contracted a disease (cancer, for example), the existence of a harm may be easy to determine, but other negative outcomes are difficult to characterize, and can be challenging to quantify. Whether a particular harm counts as an injustice is something I aim to clarify in the following chapters.

There is an interesting literature on risk perception and how people's misunderstanding of the risks associated with various exposures and activities. Communicating risk also presents difficulty, as the language used to explain it is often unfamiliar to the non-experts who may be facing exposures. Thus, if someone is told that the reference concentration for a particular substance is $2 \times 10^{-2} \text{ mg/m}^3$, this may not prove particularly edifying. Even in circumstances where we can estimate the number of likely cases of cancer per million at a specific exposure rate, people who face those or similar exposures may still not fully understand what the numbers mean.

In a small number of cases, concerns about hazards can even lead to negative health outcomes in the absence of actual exposures. For example, imagine you live near a nuclear reactor. Fortunately for you, the reactor never experiences a meltdown, and you never face exposures (and therefore, no risk). However, living with the fear of a meltdown may cause great of psychological stress, which can result in actual harms to

health.⁵⁶ Stress can be increased when inhabitants are unaware of the actual dangers posed by an industrial or commercial facility and are left to speculate about the dangers they face.⁵⁷ Finally, residents of lower income communities may have little faith in the determinations made by outside assessors, based on past negative experiences. This poses a special issue for those tasked with promulgating information about risk, and whose goal is to manage that risk. While I am not in a position to give a full discussion of how we might approach these complex issues, they are worth recognizing in our thinking about environmental injustices.

Finally, there is a growing body of literature outlining the respects in which our understanding of risk fails to take full consideration of those who are most susceptible to exposures. Traditionally, risk assessors have assumed that the person facing exposure is an otherwise healthy 70 kg man. However, this does not capture the full range of humans, and as I will show in the following chapter, EJ communities are typically home to many

⁵⁶ One of the main problems in such circumstances is that stress can lead to epigenetic changes (changes in gene expression), thus impacting how the body operates at a fundamental level. For example, when mammals experience stress, they release corticosterone (along with other hormones), and recent research has shown that chronic exposures to heightened levels of this substance lead to epigenetic changes in both the hippocampus and the hypothalamus of rats. (Richard S. Lee et al., "Chronic Corticosterone Exposure Increases Expression and Decreases Deoxyribonucleic Acid Methylation of Fkbp5 in Mice," *Endocrinology* 151, no. 9 (2010).)

Stress can also lead to higher levels of infant mortality, which is thought to account (partially) for the fact that nearly 4 times the number of African American babies died during their first year than white babies in a New Jersey study. (Lindy Washburn, "Black Babies at Twice Risk of Whites, Study Indicates," *Seattle Times*, March 3 2011.)

Further, there is evidence that lack of control, by itself, may lead to negative health outcomes. (See: Andrew M. Courtwright, "Justice, Stigma, and the New Epidemiology of Health Disparities," *Bioethics* 23, no. 2 (2009).)

⁵⁷ For example, there is a dog food factory in Westside San Bernardino that produces an awful odor, but for a long time, nearby residents were only aware of the smell, and not what actually occurred in the facility. This led to conjecture about what might take place there, which in turn can lead to higher levels of stress.

susceptible subpopulations, like children, elderly persons, and people who have underlying diseases.

Forms of Exposure

Toxic exposures can work in a variety of ways. While the paradigm case involves a single exposure to a single substance through a single pathway,⁵⁸ people living in EJ communities often face much more complex exposures, because they live near a variety of different sources, emitting a wide range of substances.

First are aggregate exposures, where a single substance enters the body through multiple pathways. This is important for evaluating risks to human health, as significant dangers may be overlooked when a study fails to acknowledge that a particular substance may enter the body not only through inhalation, but also through the skin, increasing the quantity of that substance present into the body.

Additive doses are exposures to the same substance coming from one or more sources over time. While a dose from a single source may not have significant toxic effects, additional exposures can amplify results, even if there is no increase in the quantity of the substance in individual doses. Repeated exposures may cause persistent substances to accumulate in the body over time, and in some cases make persons more susceptible to the negative affects of subsequent exposures.

Cumulative impacts or exposures address exposures to multiple toxic elements. Assessments of cumulative impact are designed to account for multitudinous exposures, as well as how various substances interact, both in the environment and in the human

⁵⁸ Route of exposure, eg., dermal, oral, inhalation, etc...

body. Looking at this larger picture is necessary for understanding how individuals in a heavily polluted community will be affected. When an examination of health impacts is completed, it is often found that multiple substances can affect the same endpoints (target organs), and there are single substances that affect different endpoints.⁵⁹ When multiple substances enter the body and impact the same endpoint (for example, if a person is exposed to a number of substances that affect the liver), this may increase the chance of an adverse health outcome.

Environmental Hazards

While many land uses might be perceived as undesirable, environmental hazards are undesirable land uses that are linked to negative health outcomes when people are exposed to the pollutants they contain or release.⁶⁰ Thus, while many LULUs contribute to social or other problems, my focus is with those that are clearly implicated in negative health outcomes. The following list is not exhaustive, and it should be noted that many facilities are responsible for multiple exposures.

⁵⁹ See also: T. J. Woodruff et al., "Meeting Report: Moving Upstream--Evaluating Adverse Upstream End Points for Improved Risk Assessment and Decision-Making," *Environmental Health Perspectives* 116, no. 11 (2008).

Endpoints are particular outcomes on which a study focuses. Additive doses are doses of the same substance coming from multiple sources. These are important because a single dose from a single source may not have toxic effects, but when that dose is added to by additional doses, toxic effects can be created or amplified.

⁶⁰ For example, correctional facilities might not be welcome neighbors, but are not directly linked to negative health outcomes. (They may increase stress, which is often implicated in poor health.)

Air Pollutants

Sources of air pollutants can generally be split into those that are stationary and those that are mobile. Stationary sources are typically facilities that release substances from a single point location, such as a factory. These are divided into “major” and “area” sources. Major sources emit 10 tons or more of a single air toxin per year, or 25 tons or more of mixed substances per year. Area sources emit less than 10 tons of a single substance per year, or less than 25 tons of mixed pollutants per year. On the other hand, mobile sources of pollution travel. Examples of such sources are personal vehicles, like passenger cars, or vehicles for transporting goods, like semi-trucks.⁶¹

The most common air pollutants in the US (according to the EPA) are particulate matter (PM), Ozone (O₃), Carbon Dioxide (CO₂), Nitrogen Oxide (NO_x), Sulfur Dioxide (SO₂), and lead. Emissions of all are linked to either transportation or industrial production. O₃, NO_x, and CO₂ largely result from vehicle traffic (as they are produced by the combustion of fossil fuels in internal combustion engines), putting those who live near highways and transport corridors at high risk. O₃ forms when nitrogen oxide combines with volatile organic compounds (VOCs, which are also produced by internal combustion engines) in the presence of light. The acute impacts of ozone are difficulty breathing, asthma, and respiratory infections, and chronic exposures can create permanent damage to the respiratory system.⁶² NO_x exposures are linked to adverse

⁶¹ US Environmental Protection Agency, "Pollutants and Sources," <http://www.epa.gov/ttn/atw/pollsour.html>.

⁶² ———, "Ground-Level Ozone," <http://www.epa.gov/air/ozonepollution/>. Toxicologists split exposures into acute, subacute subchronic, and chronic. An acute exposure is a single exposure lasting less than 24 hours. Subacute exposures are repeated exposures over the course of 1 month

respiratory effects similar to those caused by ozone exposures.⁶³ CO₂ exposures may lead to circulatory problems, by reducing the capacity of the blood to carry oxygen.⁶⁴

Particulate Matter (PM) is a considerable source of concern for many EJ communities. These tiny airborne particles are composed of a variety of substances, depending on their source, including dirt, acids, metals, and organic chemicals. PM is split into two categories: inhalable coarse particles, fine particles, and ultrafine particles. The first are 2.5-10 µm in diameter and are typically found near roads and industrial facilities. Fine particles are between .1 and 2.5 µm in diameter and result from smoke, gases from power plants, vehicle exhaust, and industry. Ultrafine particles are smaller than .1 µm. When inhaled, both types of particle can travel through the respiratory system and end up deep in the lungs, causing health problems ranging from decreased lung function to asthma, irregular heartbeat, and heart attacks.⁶⁵ Research has suggested that for every 15 years of exposure to PM, the average human life span is reduced by 2 full

or less. Subchronic exposures are repeated for 1-3 months, and chronic exposures are exposures that repeat for longer than 3 months (though are usually tested for at least 1 year). (David L. Eaton and Steven G. Gilbert, "Principles of Toxicology," in *Casarett and Doull's Toxicology: The Basic Science of Poisons*, ed. Curtis D. Klaassen (New York, NY: McGraw-Hill Medical, 2008), 18.)

⁶³ US Environmental Protection Agency, "Nitrogen Oxides," <http://www.epa.gov/air/nitrogenoxides/>.

⁶⁴ ———, "Carbon Monoxide," <http://www.epa.gov/airquality/carbonmonoxide/>.

⁶⁵ ———, "Particulate Matter," <http://www.epa.gov/pm/>, and Daniel L. Costa, "Air Pollution," in *Casarett and Doull's Toxicology: The Basic Science of Poisons*, ed. Curtis D. Klaassen (New York, NY: McGraw-Hill Medical, 2008), 1139-42.

One of the most dangerous aspects of PM is that the especially fine particles can infiltrate closed buildings through small cracks and open spaces in walls. Thus, people are frequently not safe from the smallest particulates even in their own homes. (Costa, "Air Pollution," 1130.)

years.⁶⁶ Road dust is responsible for the bulk of PM emission, putting those living near roadways or transportation corridors at especially high risk.⁶⁷

Diesel exhaust is a especially dangerous and generally includes carbon dioxide, polycyclic aromatic hydrocarbons (PAHs), carbon monoxide, nitrogen compounds, sulfur compounds, and various aldehydes. Importantly, the PM released in diesel combustion is typically ultrafine (less than .1 μm in size). These tiny particles are especially dangerous as they can penetrate very deeply into respiratory tissues. Acute exposures to diesel PM are linked to cough and nausea, while longer term exposures have been shown to lead to lung inflammation, immune problems, and lung cancer.⁶⁸ The EPA states that approximately 48 million people living in the United States live within 300 of feet of a major highways airport, or railyard,⁶⁹ suggesting that the number of people who face these exposures is distressingly high.⁷⁰

SO_2 is largely produced in the combustion of fossil fuels for producing electricity, although a non-negligible quantity also results from manufacturing. It too is implicated in various respiratory problems, including increased occurrences of asthma attacks.⁷¹

⁶⁶ Costa, "Air Pollution," 1133.

⁶⁷ Environmental Protection US Environmental Protection Agency, "Particulate Matter."

⁶⁸ _____, "Health Assessment Document for Diesel Engine Exhaust," (Washington DC: United States Environmental Protection Agency, 2002); Costa, "Air Pollution."

⁶⁹ US Environmental Protection Agency, "Nitrogen Oxides."

⁷⁰ In addition to the concerns created by diesel emissions, truck traffic in residential areas can create other problems, by creating dangers for people, particularly children, who walk in the neighborhood, and by destroying paved roads at a faster rate.

⁷¹ US Environmental Protection Agency, "Sulfur Dioxide," <http://www.epa.gov/air/sulfurdioxide/>. Sulfur dioxide is also considered one of the main perpetrators in the creation of "acid rain".

Finally, while the removal of lead from gasoline has dramatically reduced quantities of airborne lead, it still enters the atmosphere during metal manufacture and waste incineration, and is used in some airplane fuels. Lead can affect nearly every system in the body and is importantly linked to neurological effects, which can follow persons throughout their lives.⁷² Although not among the top six offenders, mercury is also fairly common and is largely produced by coal-burning power plants, exposures to which can impact nearly every organ system.⁷³

Importantly, the sources of air pollution in a community can be extremely varied, making general assessments about air quality rather challenging. EJ communities are likely to house multiple major and area stationary facilities, as well as large numbers of mobile sources like cars, diesel trucks, and trains. These release additional pollution when they are left to idle extended periods of time, as restarting rigs is difficult and time-consuming for drivers. This can complicate assessment, but the full range of sources must be considered in order to adequately protect health.

People are not necessarily safe from these external pollutants while inside their own homes. Residents of areas where there is significant air pollution are at risk inside their homes, especially from the finest particulates, which can enter and become trapped inside residences where they settle onto surfaces and are inhaled by residents. It is unclear what role attempts at mitigating the travel of fine particles into homes will play. According to some reports, even triple-paned glass windows will not prevent the smallest

⁷² ———, "Lead in Air," <http://www.epa.gov/air/lead/>.

⁷³ ———, "Mercury," <http://www.epa.gov/mercury/>.

particulates from entering residences.⁷⁴ When particulate matter becomes trapped inside homes, this can result in higher levels of PM indoors than outdoors (particularly for those homes with poor filtration and insulation), making indoor air potentially more dangerous for residents than that outside.⁷⁵

Although not directly related to air quality concerns, the presence of commercial and industrial facilities can also result in high levels of noise pollution. While it may seem less important than other dangers, noise pollution can have significant health effects, including “stress related illnesses, high blood pressure, speech interference, hearing loss, sleep disruption, and lost productivity”.⁷⁶ Many of these can serve to exacerbate the other health challenges people face or increase susceptibility to other assaults.

Soil and Water Pollutants

Many particles released into the air will eventually settle out into the soil. For example, when mercury is emitted into the atmosphere, it can settle on the ground or water, where it may be converted into the much more dangerous methylmercury.⁷⁷ PM also presents a considerable concern, as it can be composed of a variety of substances,

⁷⁴ Patrick McDonald, "Black Lung Lofts: Many Children Being Raised in L.A.'S Hip, New Freeway-Adjacent Housing Are Damaged for Life," *LA Weekly*, March 6 2010.

⁷⁵ CCAEJ conducted particle counting in Mira Loma Village, west of the city of Riverside, CA. I have been told that levels of PM inside homes are considerably higher than outdoors for residences located near storage facilities where diesel trucks idle.

⁷⁶ US Environmental Protection Agency, "Noise Pollution," <http://www.epa.gov/air/noise.html>.

⁷⁷ The form of mercury responsible for the Minamata Bay disaster, because it washes into the ocean and bioaccumulates in the bodies of fish and other aquatic organisms. (Jie Liu, Robert A. Goyer, and Michael P. Waatkes, "Toxic Effects of Metals," in *Casarett and Doull's Toxicology: The Basic Science of Poisons*, ed. Curtis D. Klaassen (New York, NY: McGraw-Hill Medical, 2007), 949-50.

many of which are quite dangerous, and can settle on surfaces. Although lead is no longer a component of gasoline, it may still contaminate the soil near older roadways.⁷⁸

Deposition of hazardous substances presents a special source of concern for children, who are both closer to the ground, and more apt to play on, touch, and even eat dirt.⁷⁹

In addition to deposition from the air, soil can become contaminated by direct emissions from facilities. Among the substances frequently found in soil are arsenic (As), cyanide, and cadmium (Cd) (as well as benzene and chloroform, which are more volatile and unlikely to remain for long). Heavy metals, like As and Cd, can have significant adverse effects. As can be fatal at very high single doses,⁸⁰ and chronic exposures can cause skin, lung, liver, bladder, prostate, and possibly kidney cancer.⁸¹ Cd is also considered a human carcinogen, and is stored largely in the liver and kidneys. Like As, very high acute exposures may be fatal, but such exposures to Cd are fairly rare in the contemporary world.⁸²

Additionally, substances like polychlorinated biphenyls (PCBs) and dichlorodiphenyltrichloroethane (DDT), which have both been banned from production in the United States for quite a long time, are still present in soil and groundwater. PCBs are very persistent, and toxic, potentially impacting nearly every organ system, and

⁷⁸ Carl F. Cranor, *Legally Poisoned: How the Law Puts Us at Risk from Toxicants* (Cambridge, MA: Harvard University Press, 2011), 28.

⁷⁹ This can also create problems for pets, livestock, and gardens.

⁸⁰ As we all know from reading mystery novels.

⁸¹ Liu, Goyer, and Waatkes, "Toxic Effects of Metals," 938-39.

⁸² *Ibid.*, 940-42.

increasing the risk of developing liver and other cancers and rare forms of melanoma. Such substances can also work their way into the food chain, and bioaccumulate in animals. While this is a significant and important source of exposure, my goal here is to focus on those hazards that are special to residents of EJ communities.

The area surrounding pesticide manufacturing facilities and waste dumps where DDT was stored often continues to contain excess levels of the substance (as well as its degraded forms DDE and DDD). Short-term exposures to high levels of DDT are linked to disorders of the nervous system, while longer-term exposures are associated with liver problems.⁸³

A large percentage of soil pollution also results from leaks at manufacturing sites and waste facilities. For example, the Love Canal disaster occurred when rainfall exposed the toxic waste on which the community had been built. Among the 82 chemicals that bubbled up into the community were 11 suspected carcinogens, including high levels of benzene, which is known to be carcinogenic in humans.⁸⁴ Exposures to these substances were believed to have resulted in numerous birth defects. Likewise, the Stringfellow Acid Pits, in Jurupa Valley, CA were loosely covered by a soil “cap” that ruptured during a

⁸³ Agency for Toxic Substances and Disease Registry, "Toxic Substances Portal - Ddt, Dde, Ddd," <http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=80&tid=20>.

⁸⁴ Eckardt C. Beck, "The Love Canal Tragedy," *EPA Journal* (1979). Classification as a “known carcinogen” typically requires data from human epidemiological or other studies. Suspected carcinogens are typically substances that have shown carcinogenic effects in laboratory animals or in limited epidemiological studies, but are not known to be carcinogenic to humans. *Citation*

rainstorm, exposing nearby residents to a flood of waste containing a total of 250 different chemical substances.⁸⁵

Another significant problem in the US is contaminated drinking water, which can be an even greater source of concern in EJ communities. Elevated levels of bacteria have been found in 20% of the water systems in the US,⁸⁶ people living in older buildings are even more susceptible, as the pipes are old and may leak metals like lead and mercury into tap water. Finally, metals and other substances can leach from waste sites and industrial and commercial facilities, contaminating ground water that ultimately finds its way into aquifers and later into homes.

Perchlorate contamination, the result of weapons production, has become a source of considerable concern for many California cities in recent years. The public water supply in Barstow, CA was shown to be contaminated in November 2010, forcing a moratorium on the use of drinking water.⁸⁷ Proximity to waste sites can also impact levels of pollutants in groundwater, particularly in cases where substances seep into water that will be used for drinking.

⁸⁵ Center for Community Action and Environmental Justice, "Stringfellow Acid Pits, Glen Avon, Ca," ccaej.org.

⁸⁶ Charles Duhigg, "Millions in Us Drink Contaminated Water, Records Show," *New York Times* 2009. (last accessed 1/24/10)

⁸⁷ Michael Sorba, "Barstow Residents Told Don't Drink Water Due to Perchlorate," *San Bernardino Sun*, November 19 2010. For Rialto, CA, the cost of filtering the water was tacked on to residents' water bills, as it was legally difficult to get those responsible for the pollution to pay for its cleanup. The area has recently been designated as a Superfund site, and thus will be receiving considerable federal support for the cleanup effort.

Circumscribing the Philosophical Issues

The goals of this project are philosophical, but its scope extends beyond the reaches of the theoretical and into the political realm, with a particular focus on policy. With this in mind, I intend to keep my discussion close to the actual experiences of EJ communities. One of the most challenging aspects of the problems under discussion is their extraordinary complexity. Although there may appear to be a variety of different problems that need to be addressed, we cannot adequately respond without taking the entire picture into account.

It is the interplay of these various challenges that make EJ communities interesting cases for justice. Communities in which multiple environmental assaults coexist with low socio-economic status, poor education, and lack of access to health care are stressed in ways that compound and multiply over time. While it may not be profound to suggest that such circumstances are *prima facie* unjust, my goal is to explore what the grounds of this claim of injustice are, and to provide a means for responding to them.

Diagnosing the Moral Concerns

It seems rather unilluminating to say that the circumstances faced by residents of EJ communities are *prima facie* wrong or unjust. While our gut feelings may suggest a perceived injustice, it helps our analysis to diagnose the source of this feeling. When we look at a community where children are growing up with compromised health due to particulate matter in the air, pesticide residue in the soil, or water contaminated with

polychlorinated biphenyls (PCBs) from a nearby waste facility, most of us are troubled.

But why?

Part of the explanation is that children who live in other (whiter, wealthier) communities don't suffer from the impairments caused by such exposures. This issue of fairness goes deeper. Part of our diagnosis of injustice involves the knowledge that things could have been otherwise. Despite the many and varied challenges associated with industrial development and technological innovation, the conclusion that the health challenges these children face are unavoidable is impossible to swallow. Further, there is no legitimate explanation for these disparities in hazards that would justify the health outcomes.

The fact that the damages are significant, and in many cases irremediable, should concern us. Again, if we focus on children, some physical harms may follow them throughout their lives, constraining the kinds of choices they will be able to make and the opportunities they will have. Whether the harm is reduced lung capacity or a lowered IQ, future accomplishments will be affected. For persons living in a liberal society, the idea that we possess a right to pursue our interests, within a certain framework of acceptability, is of extraordinary importance. This is particularly true as the inequalities suffered by such communities and individuals do not clearly serve a greater social purpose.⁸⁸

⁸⁸ This is an important point that I will not take up in much detail in what follows. For Rawls and many others, inequalities that serve the greater good are sometimes acceptable, and there is a semi-plausible argument to be made that economic stability at the large scale is partially dependent on certain sectors of society bearing greater burdens of things like environmental hazards. I do not intend to explore this route in the current work, but I do take it to be a possible objection. In order to get it "off the ground", one would

Categorizing environmental injustices is necessary for the task at hand. Clearly, minor environmental threats (like a diesel pick-up lingering too long in front of a house or ambient noise pollution related to living in an urban area,) do not constitute radical injustices requiring immediate intervention. When these threats begin to seriously impact quality of life, our intuitions change. The line between nuisance and risk to public health initially seems well-defined, but is problematized when we find that aggregated “nuisances” can become legitimate risks.

Let me illustrate with a trivial example from my own life. I live in a neighborhood with an omnipresent ice cream truck. Throughout the year, it stalks the blocks around my house, driving, stopping, driving again, all the while playing a terrible song, interspersed with clapping. Never ceasing in its relentlessly up-tempo tunes, around a circuit of which I’m nearly certain that my house is the center. I suppose this is what I get for living next-door to an elementary school, and around the block from a public park, but it still seems unfair. Obviously, this is a nuisance (or at least I experience it as such). Certainly, however, I do not wish to say that its presence is an injustice. Although it frustrates certain of my life goals, it does so only in minor ways. Obviously, the truck’s presence is bothersome, annoying, trying, but not fundamentally unjust. While I may rail against the ice cream truck in private conversation, my friends and family don’t take my concerns to the streets. And, I think, they are right not to do so.

need a view of justice requiring no inalienable rights of the person, because the forms of inequality being discussed challenge basic rights and not merely distribution of goods.

Now, let us imagine a different situation. Imagine ice cream trucks lining the blocks around my house. They block my driveway and street, making the trip to work unnecessarily challenging, perhaps even compromising my ability to keep my employment. They block the sidewalks, so that my children have difficulty walking to school, and when they get there, they are exhausted from the effort. They disrupt my family's lives at home, making eating dinner or enjoying a conversation challenging. They play their songs all night, preventing everyone from obtaining a proper night's sleep, and making us anxious and unrested when we awaken. This, we should say, is not right. While a single nuisance bothers us, the cumulative impacts of many nuisances can have significant and lasting impacts on quality of life and well-being. If we imagine this occurring in conjunction with challenges related to poverty and poor access to social goods, there may be disastrous results.

These are the impacts that most interest me. While there are certainly individual occurrences that can lead to great injustices and negative health outcomes,⁸⁹ many of the gravest environmental injustices do not meet these criteria. Even in cases where the environmental assault is singular, the effects of the assault are often exacerbated by social factors. The ice cream truck example is a bit absurd, so let us imagine what happens when the object of concern is a small industrial facility. If the facility follows the legal guidelines,⁹⁰ it should not present too great a risk to the health and welfare of those living near it. While traffic or periodic unpleasant odors are annoying, they fail to warrant grave

⁸⁹ See examples like the Love Canal, the Bhopal catastrophe, the Stringfellow disaster, or Three-Mile Island.

⁹⁰ Like complying with appropriate business practices, as well as laws regarding environmental pollution and waste disposal. I am also assuming that those guidelines are adequately health protective.

concern. In fact, two industrial facilities operating in a community might not present a serious challenge. We can imagine that even three facilities might still not create a real injustice, and then if three, why not four?

What we seem to be presented with here is the commonplace philosophical problem of the heap, except that the conceptual category about which we are trying to get clear tells us something about justice, and not merely about aggregation. Where we draw the lines of justice cannot be arbitrary or dependent on some characteristic of the object in question, but is determined by our moral perspective and how we understand the demands of justice.

While the existence of a single industrial facility in a community might not warrant a cry of injustice, the existence of numerous facilities should. This is because the presence of multiple hazards can threaten things we believe are fundamentally valuable to human beings, like good health, future opportunities, and overall well-being. And, unlike ice cream trucks, certain forms of chemical invasion can actually amplify the negative impacts of other substances, creating greater harms in their combination than the mere addition of the two substances would suggest.⁹¹

The line between nuisance and injustice, in such cases, seems to lie at the boundary of what we take to be valuable. The question of what is valued, and why, will be left for later on, but for my current purposes I will simply suggest that environmental injustices exist when certain capacities are jeopardized by the influence of environmental

⁹¹ We can imagine that the challenges created by two ice cream trucks would simply be twice that of a single ice cream truck, but for many chemical substances, the overall challenge created by the combination of substances is greater than if the two were simply added together.

factors over which persons exert no control. Both John Rawls and Amartya Sen provide views of justice requires, and while there are some significant differences in their thinking, both offer important insights into what counts as a violation of justice, which I will address in later chapters.

Chief among the things we value is good health, and one aspect that all discussions of environmental justice have in common is a concern for health. As a base level, challenges to health constitute the injustices that concern us in EJ communities. When we talk about “good health”, we might mean a variety of things. It could simply mean the absence of severe disease or disability, but in the following pages, I will generally view good health in much broader terms that move beyond simply biological functioning.

For me, good health encompasses abilities as well as achievements, like being able to meet certain career or personal goals. This allows me to argue that good health is an essential aspect of a good human life and is something worth working toward even when physical or environmental challenges make perfect biological functioning difficult or impossible. For this reason, I think that good health is good for instrumental reasons, as well as being a good in itself.

3. Communities, Agencies, and Technology

The goal of the following chapter is two-fold. First, I will present my research with the Center for Community Action and Environmental Justice, in Jurupa Valley, CA, in order to describe some of the challenges faced by one particular EJ community and to provide guidelines for what might be considered adequate or appropriate solutions to the environmental challenges many communities face. I will focus not on the distributions of hazards, but how they are perceived and experienced by those for whom they are a normal part of life. At a basic level, our answers to the problems posed by environmental injustices must be acceptable in the eyes of those whom we seek to help, and must respond to the particular concerns of impacted communities. Without doing so, such efforts seem both bound for failure and disrespectful of those they are intended to aid.

Second, I will examine some potential technological routes for mediation, as well as policy and legal strategies. It is important that the solutions arrived at are achievable, and sensible from the perspective of implementation. For example, it would certainly aid impacted communities if the environmental hazards in those communities were all immediately relocated or retrofitted, but this has very little possibility of being achieved. However, practical feasibility shouldn't prevent us from recognizing that justice may require rethinking some of our basic assumptions about what we can do. Thus, we need to focus on new technologies and creative political and legal solutions, to achieve real gains. Together with what I've already outlined, this aspect of my research should serve

in guiding solutions, and ensuring that they are adequate and appropriate to the experiences of the people and communities impacted by environmental injustices.

Community-Level Engagement

A project addressing environmental justice is useful only to the degree that it engages with the needs and desires of the persons and communities impacted by environmental injustices. With this in mind, it is necessary to integrate discussions with affected community members into the broader framework of the theoretical project. While doing so, it is important to keep the linkages between the expressed concerns and preferences of community members and the philosophical ideas of justice that motivate the creation of the theoretical model clearly in view. The theoretical approach must be informed by the experiences and needs of those communities it is intended to serve, and our understanding of those concerns should be given structure and significance through the philosophical model.

The following section outlines the research I've completed, both through discussions with residents of San Bernardino and Riverside who are affected by environmental injustice, as well as some literature on the topic. While I've focused on a small geographic area, I am not unaware of the limitations this creates. I believe that by keeping this in mind, I will still be able to use some of my experiences as exemplary. Importantly, the organization with which I've worked is rather extraordinary in its ability to use a fully integrated approach to addressing environmental issues. By working with community residents to collect information about what is going on at the ground level, to

engaging in litigation, and working with agency representatives to achieve the goals articulated at the community level, the Center for Community Action and Environmental Justice (CCA EJ), located in Glen Avon, CA, takes an interesting perspective in its work. My goal here is not to present CCA EJ as a case study, but to use some of my experiences working with them to guide my project.

Perhaps the most important lesson I've learned in working with CCA EJ is that activists from impacted communities often know precisely what they require to achieve justice. While it would be quite easy to paint a picture of victimized communities, I did not find this to be the case. Although activists may sometimes lack the theoretical apparatus to view their struggle in the terms I lay out, they are far from failing to comprehend their circumstances and the kinds of solutions that might serve to improve their own communities.

Broadly speaking, environmental justice is not simply focused on the environment and environmental issues, but is a movement with social justice goals that transcend the boundaries of particular environmental concerns. As I noted earlier, there are some important respects in which the environmental justice movement operates differently from more mainstream environmental movements,⁹² and much of what distinguishes it is related to these social goals and the challenges to which EJ communities are responding. In some respects, environmental issues provide the framework for thinking about a much broader set of concerns affecting persons who live in poor and disenfranchised

⁹² Organizations like The Sierra Club, Greenpeace, the Audobon Society, the National Resources Defense Council, and various other groups whose efforts are typically marked by a desire to protect the environment for its own sake, or to preserve the diversity of non-human animal species. I do not wish to suggest that the goals espoused by these other organizations are not desirable, or that there is never collaboration between "mainstream enviros" and EJ organizations, as there are certainly circumstances where interests coincide.

communities. Many EJ movements take a holistic approach; focusing on the health of home environments, workplaces, and neighborhoods, while examining other aspects of individual and community well-being, like access to education and healthful food, community activities, and civic representation. Importantly, the goal of many EJ movements is a positive one, where the groups view themselves as improving the health and well-being of citizens, and not simply working “against” forces that endanger health and welfare.⁹³

Community Participation: Responding to Disenfranchisement

When a community has to deal with significant environmental harms, or is unable to stop the creation of new risks, it is unsurprising that residents come to feel disenfranchised, and to believe that their needs and preferences are not given consideration by those with decision-making power. Thus, groups focusing on EJ tend to have a particular concern that community members are involved in activism in their own communities, and that even non-activists believe that their voices are being both heard and heeded.

I refer here not only to enfranchisement merely to voting rights, but more broadly to concerns regarding the individual or community-level capacity to view oneself as a participant in political life. For example, disenfranchisement might involve a lack of adequate political representation, such as is experienced in unincorporated areas that lack

⁹³ This has been suggested in my own discussions with EJ activists, but is also strongly supported by the literature.

local elected officials,⁹⁴ or poorly-designated/jerrymandered districts where elected representatives have a limited or non-existent relationship with portions of their constituency. Lacking political clout and influence over those with the power to make decisions that impact one's life are at the heart of concerns about disenfranchisement.

While the sense that one lives in a disenfranchised community, or is oneself disenfranchised, may appear to be merely a symptom of an unequal distribution of power and risk, it cannot be dismissed as merely a side-effect. The sense of exclusion from decision-making procedures can do damage to individual psychic well-being, in ways that challenge normal social integration.⁹⁵ Additionally, when people do try to engage in policy-making, they may find it difficult and demoralizing. For example, I traveled with CCAEJ to a California Air Resources Board (CARB) meeting in 2010. While the part of the meeting dedicatee to discussing the San Bernardino Railyard was quite late on the agenda; the meeting ran over the allotted time, so the discussion was moved into the last spot in order that more important business could be addressed, despite the fact that numerous people had traveled the distance from Southern California to Sacramento to attend the meeting.⁹⁶ Such feelings of disenfranchisement can breed greater distrust for both government representatives and those working with the companies and corporate entities that are seen as the creators of the harms. When communities and individual

⁹⁴ A number of communities in Riverside County face this challenge. In the absence of local elected officials, decisions about the future of a community or neighborhood are left to county supervisors who live far away, and have little responsibility to the residents of individual communities.

⁹⁵ I will return to this important topic in my discussion of Rawls in later chapters.

⁹⁶ In this particular case, the more important business was an awards ceremony.

residents grow mistrustful of agencies and corporate entities, finding solutions to problems can become even more challenging. In a sense, disenfranchisement can breed greater disenfranchisement, making it more and more difficult for people to view themselves and their communities as playing an important political role.

Community disenfranchisement can also have important implications for stress and individual well-being. Research suggests that stress and feelings of hopeless and de-egalitarianization can negatively impact health. For example, high stress is linked to poor cardiovascular health. Some evidence also suggests that stress can impact the ability to respond to health challenges, including changes in gene expression (e.g., epigenetic effects) that can do things like limit a person's capacity to fight off cancer, as has been found among women in South Side Chicago.⁹⁷

One possible response to these circumstances is to develop new and different ways for people to engage in the practices of political participation. To this end, groups like CCAEJ work to increase voter registration and awareness. Voting is a meaningful, but fairly simple, form of civic engagement, and CCAEJ also works to educate citizens about their elected representatives and the persons and agencies with the authority to impact their communities and their lives. While providing tools to become more involved in the political life of their community may not directly impact health or even prevent the introduction of new hazards, efforts to combat the feelings of helplessness associated with disenfranchisement can still play a positive role. For example, working as an activist

⁹⁷ See: Peter Aldhous, "Poor Neighborhoods Can Kill," *NewScientist*, January 13 2010. Courtwright, "Justice, Stigma, and the New Epidemiology of Health Disparities." Ken Sexton, "Sociodemographic Aspects of Human Susceptibility to Toxic Chemicals: Do Race and Class Matter for Realistic Risk Assessment," *Environmental Toxicology and Pharmacology* 4, no. 3-4 (1997).

with CCAEJ gave Maria Birrueta the chance to meet the mayor of San Bernardino, something she had never envisioned that she would have the opportunity to do. This experience helped her gain confidence in her role as a citizen and participant in the democratic process.⁹⁸ While this doesn't change the fact that she lives in West Side San Bernardino, not far from the most dangerous railyard in California, it does provide a means to fight against disenfranchisement, and its attendant negative results.

Community Participation: Stigmatization and Marginalization

By marginalization, I simply mean that when a community is, either intentionally or unintentionally, singled out for certain environmental hazards, this can lead individuals and the community as a whole to view themselves as existing at the “margins” of civil society, but not as true participants. This is different than disenfranchisement, as the concern is not a lack of political engagement, but of social engagement. One way of thinking about this is through the significant sense in which communities can come to see themselves as stigmatized when they end up taking on a more significant share of environmental harms than their neighbors. For example, it might be very challenging to live in a small community housing a huge landfill to accommodate the waste of a neighboring city, without feeling that one's own concern for health and quality of life were seen as less important than those of the wealthier inhabitants of the neighboring city.

Feeling marginalized can also extend to other forms of inequitable distribution, like the absence of grocery stores offering healthful food or the absence of quality public

⁹⁸ Maria Birueta, April 19, 2010.

education. Many factors can combine to create the feeling of marginalization at both the individual and community level, and these feelings can be exacerbated if the circumstances of life in other communities appear much better than in your own.

As a community becomes more polluted, by industry, commercial business, or other hazards, it will likely become further marginalized, as those who are financially able will move away and those who remain may feel “left behind”. The end result of this is hopelessness, the sort of hopelessness that comes with finding that your society doesn't value you, your community, or your respective projects. Hopelessness can lead to substance abuse and crime, the first of which can be harmful to individual health, while the second can impact the health of the community as a whole.

One interesting fact about EJ organizations, and many of the most publicized EJ movements, is that they are largely composed of women where women frequently take positions of power. The prevalence of women can be traced to the fact that many EJ activists were drawn to their work because they were mothers concerned for the health of their children. This was certainly the case with Lois Gibbs, and was a common theme throughout my discussion with various members of the communities in the Inland Valley area of Southern California. As I've already noted, children are especially vulnerable to environmental harms, and seem clearly to be innocent bystanders on whom harms for which they receive no obvious benefit, are visited.

The fact that those who are most vocal in addressing injustices tend to be women can further exacerbate marginalization. This stems partly from the historical view that women do not contribute to society in the same ways as men, especially if we think about

social value as linked to economic value and financial contribution.⁹⁹ Women may also find it more difficult to receive public support and recognition for their efforts, and can face great challenges to participation in political life.

While efforts to increase engagement in political life may help to assuage feelings of political disenfranchisement for residents of EJ communities, there are also some practical advances that can be made to address the concerns associated with social marginalization. As I noted in the previous chapter, EJ communities frequently lack access to the green space and recreational areas that are integral to healthy social and physical development. Efforts to create spaces like parks and recreational facilities can serve the double goal of increasing general health and well-being, while alleviating some of the concerns associated with marginalization by providing some of the benefits associated with life in wealthier communities to residents of poorer communities. CCAEJ has made excellent use of this tactic by using funds from a settlement to build a large park with a water feature, playground, and garden on their grounds. This was welcomed by many in the neighborhood, and the opening celebration was very well attended, offering residents a opportunity to come together and express themselves as a community

⁹⁹ The predominance of women, especially women of color, in environmental justice efforts also impacts how EJ groups are organized and operate. Thus, the model for organization utilized by many EJ organizations “is egalitarian in nature yet women-centered, family-centered, children-centered, equity-centered, community-centered, and health centered.” (Shirley A. Rainey, "Grassroots Activism: An Exploration of Women of Color's Role in the Environmental Justice Movement," *Race, Gender & Class* 16, no. 3-4 (2009).)

Interestingly, women have made huge strides in the more mainstream environmental movement over the past 20 years, with women, though not typically people of color, coming to play executive and leadership roles in nationwide environmental organizations. (Stuart Miller, "Women's Work--Women in the Environmental Movement," *E: The Environmental Magazine* 1997.)

As I've noted, we should also investigate the stigma attached to living in a polluted neighborhood. It seems fairly uncontroversial that living next to a waste facility would be considered socially undesirable, and that living in a heavily polluted neighborhood is not something of which people would be proud. As the "Cerrell Report" noted, some hazardous facilities "regularly are placed in areas that are not developed, have lower property values, and generally are on the 'outside' of the community's social world," which may "translate into a social stigma."¹⁰⁰ Here, we see an explicit recognition of the linkage between feelings of social marginalization and social stigmatization. In some cases, the feeling that there is nothing one can do to combat the placement of these hazards may further feelings of stigmatization.¹⁰¹

Responding to such stigmatization may require that individuals find things in their communities about which to feel proud and confident. Pride in one's own community may seem fairly trivial in the light of significant health effects, but the strength of such concerns should not be overlooked. However, pride in one's community is not something we can distribute. The creation of parks and attractive public spaces, as described in the previous pages, can provide grounds for developing a sense of pride in one's community, but efforts should go further than this. Ultimately, developing the sense that one lives in a neighborhood or community that is worthy of concern and respect is a significant

¹⁰⁰ Cerrell Associates, "Political Difficulties Facing Waste-to-Energy Conversion Plant Siting," (Los Angeles, CA1984), 9.

¹⁰¹ There is some debate in the literature about whether particular persons and communities are actively "targeted" for undesirable land uses, or are simply forced by market factors to move into areas where the land values are low, and thus affordable.

component of ensuring the well-being of a community, and is a necessary component of any effort to combat environmental injustice.

Undesirable Outcomes

Throughout my research, I repeatedly encountered two concerns regarding the treatment of residents of EJ communities. The first regards when relocation of persons living in impacted communities is appropriate, and how such location should be approached. Second is the worry that agencies do nothing but run more and more assessments and tests, failing to recognize the immediacy of the challenges residents of EJ communities face.

I will begin by addressing relocation. What is under discussion here is the idea that residents of EJ communities should simply move away if they find their polluted neighborhood to be inhospitable. For many persons this is a neither feasible nor desirable outcome. The reasons for this are both financial and social, and tell us a great deal about the circumstances of life in EJ communities.

Because residents of heavily impacted communities are largely of low socio-economic status, moving may simply be financially impossible, even in circumstances where it would be desirable. Decreased social mobility limits housing options, and the cost of living in EJ communities tends to be fairly low. Homeowners who moved to the area before it became impacted are likely to have watched the value of their property plummet, and might find it difficult to sell, or would only be able to do so at a considerable loss. For homeowners who moved to already polluted neighborhoods, the environmental circumstances may have been the reason why the particular area was an

affordable place to buy property. Rents tend also to be low in such communities, making them affordable locations for those with limited resources.

There are certainly circumstances where financial resources might be made available for residents to relocate, even to nicer neighborhoods than those they currently inhabit. However, totally independent of financial concerns, moving may simply be undesirable by itself. In one of the first public meetings I attended with CCAEJ, I met Gene, a longtime resident of Mira Loma Village, CA. Over the past few decades, Mira Loma Village has gone from a bucolic paradise to a stopover destination for goods entering the US through the ports of Long Beach and Los Angeles. Huge warehouses tower over one-story homes, and the streets are clogged with semi-trucks moving to and from the warehousing. Diesel PM emissions are so bad that Mira Loma Village now has the worst particulate pollution in the area (and according to some reports are the 4th worst in the world) and children in this area have been shown to have decreased lung capacity.¹⁰² The warehouses are an eyesore, and the pollution is harmful to health, but Gene has no intention of moving. His home in Mira Loma Village is filled with memories. He worked hard for it. He raised his children there, and now his daughter lives next door with her own family. He has a strong emotional attachment to his home and close ties to his community, and he simply wants this to be respected.¹⁰³

Here we have a conflict of values which expresses something important about the challenges facing EJ communities. The experiences of the residents of EJ communities

¹⁰² David Danelski, "Tests Find Mira Loma Has Worst Fine Particle Pollution in Area," *The Press-Enterprise*, June 5 2008.

¹⁰³ Mira Loma Village is also where I met a man who had lost his 16 year-old daughter to lung cancer.

cannot simply be cashed out in terms of net good or harm, but must respect the incommensurability of some goods and harms. To value one's experience of life in a community may not be expressible in financial terms, making no form of compensation truly adequate.¹⁰⁴ Although an outsider's perspective might suggest that moving to protect one's family's health is obviously of greater value than keeping one's home, this isn't necessarily the case. We deeply disvalue such individuals if we simply suggest that they are irrational for wishing to stay in the places they call home.¹⁰⁵ This does not mean that relocation is never an appropriate solution, and there may even be cases where forced relocation is not at odds with the demands of justice, but we should be very careful. EJ communities are, in essence, communities. They are places where people grow up, marry, work, raise families, develop lifelong friendships, etc... They are places where people live, even if they might seem unappealing or even unlivable from the outside.

The second concern regards the propensity of agencies, at both the federal and state levels, to engage in wave after wave of research without determining to act. This was expressed in coverage of the December 2010 White House meeting between EPA administrator Lisa Jackson and EJ representatives from all over the US. Suzie Canales, an activist from Corpus Christi, TX, interrupted the meeting to announce that she and people

¹⁰⁴ Thanks to Joshua Hollowell for his help in clarifying the incommensurate values at stake in this section.

¹⁰⁵ There is an interesting parallel here to the larger debate about Rational Choice Theory, and what it means for people to act according to their own interests. A view of rationality that captures the large variety of potential values someone can express will be better able to understand human behavior, and less likely to discount those behaviors that fail to meet an arbitrary standard of what it means to act in one's own self-interest.

in her position “need to stop being studied to death.”¹⁰⁶ This particular concern is not uncommon for residents of heavily impacted communities, who believe that the health effects they face have been adequately proven by their own and others’ experiences, and don’t require further scientific analysis.¹⁰⁷

My goal here is not to adjudicate whether or not additional scientific research into the potential health effects at particular locations is justified, but to give voice to some of the concerns expressed by people whose communities are being studied. Thus, I will not take a position on the value or efficacy of testing, as that would need to be discussed and evaluated on a case-by-case basis, and anecdotal evidence is unlikely sufficient to warrant government intervention. However, we must recognize that studies, by themselves, do nothing to alleviate the concerns of the residents of EJ communities, especially if they are not backed up by commitments to intervene in cases where it is appropriate. If someone can tell simply by speaking with her neighbors that there is a high rate of cancer in her neighborhood or if all of the children have respiratory problems, learning that government agencies intend to pour resources into proving what she already knows will come as cold comfort. While we must respect how scientific and legal methodologies operate, we should also acknowledge the circumstances of those persons who regulatory and policy decisions are intended to aid. This makes our

¹⁰⁶ John McArdle and Gabriel Nelson, "Environmental Justice Activist Urges EPA Chief 'to Roll up Your Sleeves' at Tense W.H. Forum," *The New York Times*, December 16 2010.

¹⁰⁷ In my initial research, I was heartened when I heard that there were plans to engage in further multi-year studies in one of the communities where I was a volunteer. However, I was quickly disabused of this optimism by CCAEJ activist Rachel Lopez, who viewed the EPA’s decision to engage in more research as merely a means of stalling meaningful action.

investigation and discussion of these issues much more difficult. In particular, scientists and policy-makers may need to be more responsive to how residents of EJ communities perceive their actions.

Situating this Research

I am not a social scientist, and although I have done my best to follow generally accepted protocols for qualitative research, my goal is an empirically-informed model for thinking about environmental injustice, and not a scientific analysis of the behavior of EJ activists or a theory of how such organizations operate. The data collected during my work with CCAEJ has been overwhelmingly qualitative in nature, and my methods for collection have roughly followed a framework usually described as “grounded theory”, where the investigator does not operate separately from the group under investigation, but works with them in her quest to identify certain important practices and other information relevant to her interests.

My research focused on a small geographical area, and although I engaged in literature review to better situate this research, I have tried to avoid assuming that all communities of color are interchangeable, or that all environmental justice advocates and activists have the same goals. While it is possible to paint with a fairly broad brush in certain respects (given that most activists wish to create better living situations for themselves and others), this may not be the most acceptable, or even the most successful, way to approach different communities and the specific struggles they face. My work with CCAEJ is intended to give greater force to my claims, but should not be taken as a

suggestion that I have captured every conceivable problem or response to environmental injustice.

There are dangers inherent in washing over difference, and chief among these concerns is that we might fail to recognize the variations that have considerable impact on the appropriateness of the solutions. To illustrate some of these concerns, Eric Yamamoto and Jen-L Lyman point out three incorrect assumptions made when thinking about environmental disparities based on race. First, it is assumed that a “hazard-free environment” is the goal, which neglects the fact that communities may desire, and benefit from, some industry.¹⁰⁸ Second, current thinking about EJ issues focuses only on outcomes, without paying much attention to the processes by which they are achieved. In this way, the mechanisms leading to disparities in exposure are neglected in favor of strictly focusing on the problems resulting from those disparities.¹⁰⁹ Finally, focusing on equal protection tends to flatten differences, and assumes that the needs and preferences of various groups will be the same.¹¹⁰ As I have argued, and will continue to argue in the

¹⁰⁸ Assuming that the benefits materialize, which, as I have noted, isn’t always the case.

¹⁰⁹ Taking the process seriously may also be very important because EJ communities are frequently marginalized, and residents are likely to view themselves as disvalued and disenfranchised. Even if a particular community is unable to meet all of its goals, participation in the political process can have transformative powers for those involved. I have seen this frequently in working with residents of West Side San Bernardino who are involved in CCAEJ activities. This area is low-income and primarily Latino, with a large number of residents who are primarily Spanish speakers. Becoming involved in the fight for the health and safety of their community is a way for many of these residents to involve themselves in the public sphere in new and meaningful ways. In particular, it gives those women who are not accustomed to having much of a voice in their lives or a great deal of control over their futures an opportunity to express themselves and fight for the health of their families in powerful new ways.

¹¹⁰ Eric K. Yamamoto and Jen-L W. Lyman, "Racializing Environmental Justice," *University of Colorado Law Review* 72(2001): 320-23.

Native Americans are especially negatively impacted by this flattening, as their particular relationship to the land on which they live adds a special importance to the way they value that land and its health. Additionally, Native people stand in a peculiar legal relationship to the federal government, and this

following chapters, taking the desires and values of individuals and communities seriously is a key component in appropriately responding to environmental injustice, and failing to recognize what a community would take to be an appropriate response may, by itself, represent a significant injustice. For example, simply giving everyone the financial resources to relocate, without asking residents what they want, might be viewed as a disrespectful act. Likewise, assuming that financial compensation may be an adequate response to all forms of injustice doesn't fully respect persons as freely acting agents and centers of value.

Finally, I should also acknowledge that the individuals with whom I spoke, and those who have been interviewed by others or spoken publicly, were already engaged in public discourse about environmental injustices, and may not represent the full spectrum of the residents in their communities. There are likely many residents of heavily impacted communities who are not concerned with the environmental hazards to which they are exposed and are even less interested in speaking out about them. In fact, evidence like the "Cerrell Report" suggests that communities are targeted for LULUs on the basis that they have a large percentage of citizens who are thought unlikely to complain. Given that there is such substantial empirical support for the existence of such injustices resulting from the unequal distribution of environmental hazards, nonetheless I do not believe my work falls prey to these concerns. The fact that some individuals do not think of themselves as victims of injustice does not necessarily entail that they are not. For

relationship is frequently taken advantage of by representatives of various levels of the government to the benefit of individuals and companies not affiliated with the reservation.

example, the fact that many victims of Jim Crow laws did not become activists in the Civil Rights Movement does not tell against the justness of that movement or the injustices to which people were responding.

Policy, Law, and Technology

While we must take seriously what's important to residents of impacted communities, we also need to think about what is feasible. As the goal of this project is, in part, to provide a model to offer guidance for policy-makers and those with the power to make the legislative and institutional decisions that will better serve the needs of justice in EJ communities, it must have some practical basis. While scientists can help us to understand the mechanisms by which various substances cause harm and to evaluate the extent of that harm, they can also provide important guidance for analyzing which mitigative approaches will be the most effective and what kinds of regulatory policy will be the most health-protective. When the dangers faced by a community are dangers to health, the required solutions are not only those that have the appearance of improving the environment, but those that will have actual and significant effects on the lives of people in the communities to which they are addressed. By coupling these with a view of what is practicable from legal and political perspectives, we can begin to construct a better-developed picture of not only what should be done, but what can be done.

I will begin with an anecdote that tells a great deal about how philosophical notions of justice differ from the ideas of those tasked with addressing the concerns of EJ communities. In a private conversation about EJ communities in California, a

representative from the California Department of Toxic Substances Control (DTSC) told me that conceptually, environmental justice is a meaningless term, and that working for justice is, in this particular case, simply a fool's errand. This person viewed justice as a commodity, and the requirements of justice as settled by those with the power and wealth to make determinations about what is good for society.

While this was not the response I typically heard from public officials, it picks up on aspects of the debate that are difficult to ignore.¹¹¹ For many who work in appointed or elected public office, notions of justice are at a far remove from the considerations of everyday political life and concerns about how we should treat one another or construct more just systems take a back seat to the more pressing considerations of budgetary concerns, upcoming elections, worries about job security, and impressing the “higher-ups”. Justice may be a meaningless term for those whose job it is to mete it out, but we cannot let this prohibit us from thinking that perhaps justice ought to play a role in public discourse.

Environmental Policy and Policy-Makers

One key challenge presented by environmental injustices is that a problem or violation may come under the jurisdiction of many different bodies, and will thus require the coordinated effort of a number of organizations and their representatives to reach a solution. For example, if we are dealing with a particularly dangerous industrial site, like a lead smelter, different agencies may be responsible for different aspects of its

¹¹¹ I do have a suspicion that the person in question may merely have been “showboating”, and am unclear about how much of what he said to me in private he would have been willing to say in front of colleagues or representatives from EJ communities.

functioning, or multiple agencies may be responsible for a single aspect. For a lead smelter, the Occupational Safety and Health Administration (OSHA), will be responsible for overseeing health risks to employees, while EPA, working under the guidance of the Clean Air Act (CAA), is responsible for gaseous emissions. Because different agencies are responsible for different aspects of the plant's operation, making decisions about strategy for increasing health protections can be difficult.

We should also look at the role local authorities play, as they may represent the first option for residents looking to address concerns. Local agencies can be as small as communities or wards, but can also include larger bodies like cities, counties, and districts, which are comprised of multiple counties. Typically, such bodies are not responsible for creating the broader regulations designed to protect health, but can play a large role in enforcement and can set local standards, particularly with regard to zoning and sometimes permitting.

State and federal authorities are responsible for much regulatory law, but they too stand in a hierarchical relationship. In many cases, it is the federal government that sets the basic standards, and while individual states can manipulate certain aspects of them, they cannot go beyond certain requirements. Thus, while the federal government might enact a law requiring a limit on emissions of a specific hazard like lead, states are required to meet this standard and cannot enact any regulations allowing for emissions in excess of that federal standard. However, states are allowed to pass laws that are more stringent than those created by federal standards.

While jurisdictional issues may initially appear to endanger EJ efforts, they have some positive aspects. In particular, the fact that so many agencies are involved can provide individuals and communities with a variety of avenues to explore in their quests for justice, allowing a degree of creativity in their approach. While it might be difficult to get the local government to do something about a particular nuisance industry in a community, if that industry fails to meet OSHA or CAA standards, the local government's authority will be preempted by either state or federal authority, and thus changes may be required of that industry, regardless of the position that local authorities take.

One major goal of agencies concerned with public health is to make known the levels of contamination in communities and workplaces, and to explain the particular health risks associated with exposures to such contamination. However, communicating the extent of the risk is a challenge, and can be especially difficult in communities where the levels of education are low. While the meaning of risk may be fairly clear to risk assessors, non-expert populations may find such information challenging, or fail to understand precisely what the numbers suggest. On the other hand, risk assessors often fail to recognize that the very fact of chemical exposure might itself be viewed as a form of harm, regardless of whether or not exposure-related physical harm has occurred. In my experience, it has often seemed clear that there is a disconnect between what scientists think they are expressing, and how non-scientist residents understand their circumstances. Although those responsible for risk assessment may think that the risks a community faces are not all that profound, the experience of those living in impacted communities

may be very different. Thus, if you are being told that there are only minimal risks in your neighborhood, but many of your neighbors seem to be developing cancer, it will be hard to take the claims of scientists particularly seriously.

A further challenge to communication of risk results from barriers created by the usage of different languages. While understanding technical jargon about health impacts and the effects of chemical substances is challenging for anyone not trained in these fields, there are even greater challenges for residents who have limited English skills, but are forced to navigate a system designed primarily for English speakers. Immigrant populations are frequently among the lower income classes, and can present ideal targets for developers, as they are unlikely to offer much resistance to the presence of a new LULU.¹¹² Professional translators are of great value, but can add a layer of confusion to conversations, making it more difficult for people to fully understand the complicated environmental challenges they may face. Such circumstances may also serve to further the sense of disenfranchisement that many residents of lower income communities already feel, increasing stress for those trying to understand their circumstances.

Legal Remedies

One option available to many communities is to pursue legal avenues by suing to prevent a facility from being built, seeking compensation in the civil law when a harm has already taken place, or suing government agencies to offer more health protective regulatory policies. The South Camden case presented in Chapter 2 is an example of the

¹¹² Translation becomes even more problematic when there are multiple languages spoken in a community, which isn't uncommon in many areas of the US.

first tactic. The Fourteenth Amendment contains the Equal Protection Clause, which guarantees that all citizens be given full protection by the laws of the US, and provides a means for showing that particular actions taken by the government should be dismissed as discriminatory. This clearly applies to actions of individual states, but has also been found to apply to actions taken by the federal government. In order to have a case, it must be shown that the action in question truly is discriminatory, because there is no reasonable explanation for its existence, and it must be shown that the discrimination was intentional.¹¹³ Title VI of the Civil Rights Act prevents discrimination by state or local agencies that receive federal funds. Like the Equal Protection Clause, it requires discriminatory intent. Some agencies have determined that disparate impact is sufficient to prove discriminatory intent, and in 1984 the EPA created amended regulations forbidding agencies that received federal aid from permitting facilities in locations that would lead to discriminatory effects.¹¹⁴ In effect, this should prevent local or state agencies, like the NJDEP in the South Camden case, from granting permits for the construction of facilities in areas where those facilities can be shown to significantly impact the health of a racial or ethnic group, even if there is no evidence that such was the intent.

¹¹³ Philip Weinberg, "Equal Protection," in *The Law of Environmental Justice: Theories and Procedures to Address Disproportionate Risks*, ed. Sheila R. Foster Michael B. Gerrard (Chicago: American Bar Association, 2008), 3-4.

¹¹⁴ Bradford C. Mank, "Title Vi," in *The Law of Environmental Justice: Theories and Procedures to Address Disproportionate Risks*, ed. Sheila R. Foster Michael B. Gerrard (2008), 25-26. The regulation prohibiting discriminatory effects in siting can be found at 40 C.F.R § 7.35(e).

While both the Fourteenth Amendment and the Civil Rights Act have been used in attempts to achieve the desired goals of many communities, the lengths to which citizens will go to fight both current and future hazards point to an important aspect of EJ issues. There is a fundamental urgency to questions of environmental justice, born of the immediacy of the health concerns to individuals and communities.¹¹⁵ Residents of impacted communities do not have the luxury of waiting for legislative or regulatory decisions, which can take years, but require immediate changes, even if these efforts must at first seem somewhat slipshod. Thus, even though there might be a complex chain of legal processes through which organizations can work to change air quality standards, from the perspective of the community such long-term goals cannot be the only, or even the primary, focus. In many cases, communities, and the citizens who live in those communities, want to prevent further harm to themselves and their families, whether by preventing the creation of new hazards or by reducing current levels of impact. While this necessity is not peculiar to environmental injustices, it helps to explain why communities are willing to be creative in their usage of various legal strategies to effect short-term change.

Many communities have been able, after experiencing harms, to sue the parties responsible for those harms in order to receive compensation to pay for healthcare, depreciation of land value, and in some cases punitive damages. Overall, such methods are less desirable than preventing harms in the first place, but can at least provide

¹¹⁵ For this reason, communities may also look for strategies with immediate results. As in the South Camden case, achieving a temporary injunction is not a permanent solution, but may prevent harm in the short term, and give residents the opportunity to conceive of longer-term solutions.

residents of heavily impacted areas the financial tools to respond to harms. Residents of Glen Avon, CA, received significant financial compensation for the harms they faced as a result of the overflow of the Stringfellow Acid Pits. This community ultimately received a total of \$114 million in reparations, which were used to pay for the medical bills of affected residents, especially those children who had been exposed at their elementary school. In addition, their efforts helped to create greater protections for similarly situated communities in a legal battle that went all the way to the US Supreme Court.¹¹⁶

Finally, impacted communities and their representatives can sue state and federal agencies not only to stop new hazards, but to create better mechanisms for protection overall. Such attempts are especially difficult, because it must be shown that current regulatory policy fails to protect health or that disparities in health or the distribution of environmental hazards are the result of specific policies. One important development associated with the EJ movement is the creation of designated Superfund sites. The Superfund Program began as a result of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, which was a response to the environmental health disasters of the 1970's, including that at the Love Canal. The legislation was designed to provide funding for the clean up of former waste sites, to ensure community involvement, and to provide means for holding negligent parties responsible for harms to persons and communities.¹¹⁷ This provided an important legal response for communities

¹¹⁶ Center for Community Action and Environmental Justice, "Stringfellow Acid Pits, Glen Avon, Ca."

¹¹⁷ US Environmental Protection Agency, "Superfund," <http://www.epa.gov/superfund/about.htm>.

facing environmental challenges, while seeking to ensure that areas affected by waste dumps will become habitable in the future.

Technological Possibilities

Many of the problems associated with environmental injustice result from deficiencies in current modes of technology. Full-fledged change in the way that consumer and other products are manufactured, transported, and disposed of is outside the purview of my current project, but without such changes, a large-scale reduction in environmental impacts is hard to envisage. However, people are becoming increasingly aware of the importance and value of pursuing other ways of doing business, and so-called “Green Technology” is a focal point of the current federal administration’s plan for the future. A reduction in the combustion of fossil fuels would certainly aid in reducing exposures to PM, especially diesel PM, and motor vehicles are now subject to much more stringent emissions regulations than they were even a decade ago. Likewise, policies like the Clean Air Act and other EPA regulations have limited the quantities of airborne pollutants that industries or individual facilities are allowed to emit. Although many of these are directed at reducing the emissions of Green House Gases (GHGs) associated with global climate change, many are also share a direct impact on human health. Thus, by reducing such emissions, we can begin to help those in EJ communities.

These efforts represent an important step in protecting the health of persons and communities. However, we need to look both at as well as emissions. In fact, when it

comes to thinking about actual health affects, the exposures are really our key concern.¹¹⁸ Thus, efforts that do little to change the chemical substances that are emitted, leaked, or dumped in communities, but limit the quantities with which persons come into contact can provide significant health protections. Efforts to limit exposures may involve preventing substances from entering the air, water, and soil, or may involve efforts to ensure that substances do not reach human populations. For example, water pollutants like perchlorate can be removed through filtration processes, and some air pollutants can be kept out of homes with the installation of better air conditioning units and more secure windows and doors. As I will discuss further in later chapters, installation of lines of trees and shrubbery can remove significant quantities of PM and other pollutants from the air if they are strategically placed near pollution sources or receptors.

Technological developments have also enabled better data collection. In particular, companies are developing much more sensitive instruments for taking real-time contamination measurements. Such developments enable residents to be more proactive about protecting themselves, by alerting them when pollution levels reach dangerous levels.¹¹⁹ For example, CCAEJ has partnered with the University of Southern California to do on-the-ground monitoring of pollution levels in neighborhoods in Riverside and San Bernardino Counties. Activists received special training in the use of P-Traks, which enable measurements of PM. These efforts have provided CCAEJ with

¹¹⁸ As noted in Chapter 2, without exposure, there is no risk.

¹¹⁹ For example, Sensorware Systems has designed technology that will provide exact real-time measurements, allowing for residents and agencies to know when pollution levels spike, or if there are leakages from specific facilities. Although helpful for protecting health, such technologies are fairly expensive, and most EJ communities lack the financial resources to afford them.

more data to bring to their discussions with agency representatives and given residents greater opportunities to become active in their communities and in protecting their own health.

Obviously, this does not exhaust the list of possibilities, but gives a general view of the available options. Importantly, we must note that people cannot be harmed if they are not exposed, and in some cases limiting exposures may offer better health protection than working to limit emissions. This is due partly to the difficulty of passing new regulatory laws, which can take years. Although limiting exposures does not present a long-term solution, and certainly won't curb the effects of pollutants on other parts of the ecosystem, it is preferable to doing nothing while waiting for regulatory action. In addition to preventing further harms, such strategies also mirror the urgency of the challenges EJ communities face.

Taken together, these various approaches give a more nuanced view of what residents of EJ communities want, the specific social and legal challenges they face, and the avenues available for addressing those challenges. While there are some clear legal and policy avenues available for preventing harms or compensating persons for damages already faced, we must also recognize that the primary goal is frequently to limit harm. Efforts to limit exposures can prevent additional harms and offer a means for residents of impacted communities to play an active role in their own health and the life of their community. As I've already suggested, feelings of hopelessness and marginalization may be fairly common in EJ communities, and efforts to combat this or help to engage citizens

or aid them in playing an important agential role in their own lives seem especially valuable.

4. A Representative “EJ Community”

To aid in my discussion of the challenges faced by residents of heavily impacted communities, I will utilize what I call a “representative community”. Although not an actual community, this place shares a great deal in common with many real communities, and will be used as a point of reference in later chapters. EJ communities vary, and I do not wish to neglect this fact in any respect. The goal of this project is not merely to point out challenges, but to offer solutions, and accomplishing this may require some simplification.

Vulnerabilities/Susceptibilities

I will begin by discussing the aspects of this community that make it especially vulnerable to toxic assaults, before moving to what those toxic assaults actually are. To frame the discussion I will discuss what Ken Sexton, (following J.A. Grassman) calls “susceptibility factors”, which make individuals and populations more sensitive or vulnerable to adverse health effects.¹²⁰ Typically, and thus in our representative

¹²⁰ Sexton, "Sociodemographic Aspects of Human Susceptibility to Toxic Chemicals: Do Race and Class Matter for Realistic Risk Assessment," 264.

Grassman, in a paper from 1997, makes the additional distinction between constitutive and acquired factors that may affect risk. Constitutive factors are biologically determined, and are linked to genetic predispositions or other facts like gender. (E.g. cervical cancer doesn't occur in biological males who lack cervixes and thus plays a significant role in determining risk.) On the other hand, acquired factors are those facts about a person that put them at risk, but are not innate to the individual. These include what he calls pre-existing exposure and quality of life, where quality of life includes lifestyle, access to medical care, and similar factors. (Jean Grassman, "Acquired Risk Factors and Susceptibility to Environmental Toxicants," *Environmental Toxicology and Pharmacology* 4, no. 2-4 (1997): 210.)

community, EJ communities have a majority of residents who are of low socio-economic status, which carries with it other factors that may make these communities and the individuals who inhabit them, more susceptible. One primary consideration is that low-income persons often lack access to good health care, including preventative and primary care, as well as treatment for illness, disease, and injury.¹²¹ While lacking access to good health care creates challenges for anyone, it may be particularly significant for those who are most susceptible, like children, the elderly, and people with chronic health conditions. Lack of access may result from being un- or under-insured, lacking the funds to pay for treatment, or simply facing geographical challenges that make accessing treatment especially difficult. For example, there may be no clinics or hospitals located in an area, and residents do not have access to adequate transportation to get them to locations where they can seek treatment (which is a common problem for individuals in lower income brackets).

In addition to poor access to health care, people in impoverished circumstances are often faced with limited access to other key determinants of good health. For example, while wealthier communities may have a variety of grocery stores ranging from fairly inexpensive markets to specialty shops, poorer communities are more likely to have a limited range of food options. Many communities lack even a local grocery store, and residents must rely on liquor or convenience stores that sell packaged snack foods high in

¹²¹ The National Environmental Justice Advisory Council (NEJAC) describes these health challenges in terms of “preparedness” and “ability to recover”, which I think capture the general ideas very well. (National Environmental Justice Advisory Council Cumulative Risks/Impacts Work Group, "Ensuring Risk Reduction in Communities with Multiple Stressors: Environmental Justice and Cumulative Risks/Impacts," (US Environmental Protection Agency, 2004).)

fat content and heavily salted. Without access to healthy options like fresh fruits and vegetables, developmental health and general well-being can be significantly affected. For children, good health habits are especially important, and learning to eat a nutritious and healthy diet can continue to play an important role throughout a person's life.¹²² Further, poor nutrition early in life can lead to other negative health outcomes in adulthood.

Additionally, poorer communities are less likely to have outdoor and indoor recreational spaces, like parks and sports facilities, where residents can exercise and socialize. While this may significantly impact the well-being of adults, it is especially critical for children, as play is crucial to the development of both physical and social skills. Thus, we'll assume that our community's residents don't have easy access to nutritional foods or recreational facilities.¹²³

It must also be acknowledged that many impoverished communities face numerous problems related to alcohol, tobacco, and substance abuse. Smoking cigarettes both causes lung damage and makes individuals more susceptible to infectious disease, alcohol abuse is associated with diseases of the liver and impaired judgment, and the abuse of harder drugs (cocaine, heroin, etc...) can have harmful physical effects and is associated with dangerous social activity and crime. Rates of smoking, heavy drinking,

¹²² For a discussion of "food deserts" (areas without supermarkets and limited access to healthful food) see Renee E. Walker, Christopher R. Keane, and Jessica G. Burke, "Disparities and Access to Healthy Food in the United States: A Review of the Food Deserts Literature," *Health and Place* 16, no. 5 (2010).

¹²³ I will not be addressing in any detail families where the resources are not great enough to meet dietary needs. While undernourishment due to poverty exists in the US, looking at it in great detail is outside the purview of my current project.

and other drug abuse tend to be higher in poorer communities, and this is often linked to high rates of unemployment and few opportunities for career advancement and development.¹²⁴

As already noted, the issue of race should not be ignored, as communities that are heavily impacted by environmental health hazards are frequently inhabited by majority populations of people of color. While race by itself does not necessarily contribute to susceptibility, it has been shown that particular racial or ethnic groupings tend to show particular susceptibilities, like predispositions to certain diseases.¹²⁵ Further, a much larger percentage of people of color live at or below the poverty line in the United States than do white citizens, creating circumstances where communities with large percentages of people of color also tend to be impoverished.¹²⁶ Racial discrimination can also make it difficult for people of color to exercise social and physical mobility, making it especially challenging for those in impacted areas to move to safer or healthier communities. Together with socio-economic status, the challenges resulting from being a person of color may make race an active stressor, causing this subpopulation to be even more vulnerable.

¹²⁴ Ken Sexton discusses some of these concerns in Sexton, "Sociodemographic Aspects of Human Susceptibility to Toxic Chemicals: Do Race and Class Matter for Realistic Risk Assessment."

¹²⁵ For example, persons of African descent are much more likely to develop sickle cell anemia, a disease that is fairly rare for people in other ethnic and racial groups.

¹²⁶ Data from Urban Institute and Kaiser Commission on Medicaid and the Uninsured, (based on the Census Bureau's March 2009 and 2010 Current Population Survey) show that the poverty rate is 13% for white households, 35% for African American households, and 34% for Latino/a households. (Kaiser Family Foundation, "Poverty Rate by Race/Ethnicity, States (2008-2009), Us 2009," The Henry J. Kaiser Family Foundation, <http://www.statehealthfacts.org/>.)

There are also some recent data indicating that stress linked to socio-economic status, disenfranchisement, un- or under-employment, racial discrimination, and other factors may burden individuals in ways that make them more susceptible to environmental insults and disease.¹²⁷ While there may be particularly susceptible subpopulations in burdened communities, the individuals who live in those communities are already more sensitive to certain impacts. This means that we EJ communities represent a stressed population that is already vulnerable in many respects and then faces poor access to health care and nutritious food.

While all of these factors make the residents of our community more vulnerable to environmental assaults, we should also address those persons whose special characteristics make them more susceptible.¹²⁸ EJ communities are home not only to healthy adults, but to children, the elderly, the physically disabled, and persons with compromised health. Thinking about these populations is important, as we need to take note not only of how exposures will affect those in good health, but the impacts they will have on those who are least able to withstand them. While the entire population of the representative community may be considered vulnerable, susceptible subpopulations are

¹²⁷ See: Courtwright, "Justice, Stigma, and the New Epidemiology of Health Disparities." Aldhous, "Poor Neighborhoods Can Kill." Grassman, "Acquired Risk Factors and Susceptibility to Environmental Toxicants." Michael Marmot, "Social Causes of Social Inequalities in Health," in *Public Health, Ethics, and Equity*, ed. Fabienne Peter Sudhir Anand, Amartya Sen (Oxford: Oxford University Press, 2004); John Collins Rudolf, "Stress, Pollution and Poverty: A Vicious Cycle?," *The New York Times*, January 11 2011.; Sexton, "Sociodemographic Aspects of Human Susceptibility to Toxic Chemicals: Do Race and Class Matter for Realistic Risk Assessment."

¹²⁸ NEJAC defines vulnerability as a way to talk about the sensitivities of subpopulations, and susceptibility as a term for describing individuals. I think this is a helpful characterization. (National Environmental Justice Advisory Council Cumulative Risks/Impacts Work Group, "Ensuring Risk Reduction in Communities with Multiple Stressors: Environmental Justice and Cumulative Risks/Impacts.")

at an especially elevated level of risk for the adverse affects associated with exposures to toxicants.

Children are still developing, and thus, any environmental harms can have lifelong impacts if they affect the way that various organs and systems mature. Child development starts with gametogenesis, or the production of gametes by the parents, and continues through the various stages of fertilization, implantation, organogenesis (organ formation), fetal development, and after birth. At each stage, the embryo or fetus has special susceptibilities, resulting in a variety of possible dangers to good health.¹²⁹ For this reason, we need also look to exposures faced *in utero*, and in some cases, prior to conception, since both spermatozoa and ova can be affected in ways that will impact later development. Because the growing fetus gets all of its nutrition from its mother, and at early stages relies on the mother for other basic functions, her exposures are likely to be shared with the fetus, and, if toxic, may have detrimental impacts *in utero*, as well as during post-natal and childhood development. In fact, the fetus may be exposed to a higher dose relative to body weight (given its much smaller body mass).¹³⁰ While teratogenicity¹³¹ is a focus of major concern, many developmental challenges are much more subtle. Some *in utero* exposures may cause disorders that don't appear until

¹²⁹ John M. Rogers and Robert J. Kavlock, "Developmental Toxicity," in *Casarett and Doull's Toxicology: The Basic Science of Poisons*, ed. Curtiss D. Klaassen (New York, NY: McGraw-Hill Medical, 2008), 421-23.

¹³⁰ Philippe Grandjean, et al., "The Faroes Statement: Human Health Effects of Developmental Exposure to Chemicals in Our Environment," *Basic & Clinical Toxicology and Pharmacology* 102(2007): 73.

¹³¹ Birth defects.

adulthood and may be passed on to subsequent generations.¹³² Finally, parental exposures that occur even before conception have been shown to have significant impacts on later development.¹³³

Children remain especially susceptible throughout development, as some organ systems continue to grow and change well into adolescence. When born, children will carry whatever chemical burdens they received *in utero*, in addition to further doses of chemical substances, like that received through drinking breast milk. Children interact with their environment differently than adults, because they are lower to the ground, but also because they are still exploring and learning about the world around them. This makes them more likely to play outside, put things in their mouths, and absorb any dangerous substances that may be present. Younger children also breathe at greater rates than adults, making it possible for them to inhale greater quantities of airborne pollutants and other hazardous substances.¹³⁴

¹³² Due to mutagenesis in sexual cells, which may not impact the life of the individual who was exposed *in utero*, but will have affects on any children produced with those cells.

¹³³ Thus, we need to look at individual susceptibility as traceable to very early events in fetal life, as well as exposures that may have occurred prior to conception, as the gametes involved in conception can carry abnormalities that will lead to problems later in life. Agent Orange is a paradigm example of such a problem, where people who were exposed to the chemical and went on to have children had a high likelihood of spina bifida and other disorders. Many other factors can influence prenatal development, and while these concerns are too varied more me to address them all in great detail, they are worth noting. Poor nutrition on the part of the pregnant woman can lead to adverse affects in infants, and animal studies have shown that rodents who were stressed during pregnancy were more likely to have offspring with low birth weights or congenital malformations. (Rogers and Kavlock, "Developmental Toxicity," 431.)

¹³⁴ Costa, "Air Pollution," 1128.

Breathing presents a significant issue as children are likely to inhale greater quantities of air into their lungs and, with that air, whatever toxins or toxicants compose that air. With something like particulate matter, if a child inhales three times the air than an adult does, that child will also be inhaling three times the particulate matter than an adult, and thus levels of airborne PM that might be safe for an adult may not be safe for a child.

The immune systems of the elderly are often compromised due to age, and they may have greater difficulty both fending off illnesses and recovering from ailments. While not as active as children, older people often suffer from ailments that may be exacerbated by pollutants or make them more susceptible to the harms those pollutants cause.¹³⁵ Elderly persons also carry with them the body burdens of many decades, including those persistent toxins and toxicants with which they have come into contact over a period of many years.¹³⁶ Finally, the elderly poor tend to rely heavily on Social Security and often live alone and without good nutrition. While the data vary some across race, poverty and isolation in old age are linked to chronic disease and susceptibility to disease.¹³⁷

Lastly, there are also special susceptibilities created by physical conditions and impairments. Asthmatics, for example, are affected more severely by airborne pollutants than those with healthier respiratory systems, and asthma itself is likely to be caused by PM exposures. Mobility problems (such as those related to physical handicaps) will make

¹³⁵ Again, if we look at something like PM in the air, an individual whose respiratory system is already compromised due to experiences earlier in life may experience greater negative impacts when high levels of particulates are present in the air they breathe.

¹³⁶ Different substances behave differently in the body. Some (like PCBs and other persistent organics) will bioaccumulate, remaining in the body and increasing in concentration as additional doses of the substance are introduced into the body. Such substances may build up in tissues and cause ill effects in the long term. (For example, lead will collect in bone, and as bone density decreases with age, the lead may enter into the blood stream. This can also occur when calcium is pulled from bone when a woman is breastfeeding.) Other substances won't necessarily bioaccumulate, but lifetime exposures can lead to significant damage, as with asbestos, repeated exposure to which will eventually lead to reduced lung capacity and possibly mesothelioma. Others will only remain in the body for short periods of time, and thus do not accumulate in tissue, but may have acute toxic effects if they are metabolized. (For a general discussion of these issues, see Cranor, *Legally Poisoned: How the Law Puts Us at Risk from Toxicants*, Chapter 2.

¹³⁷ Jill Stein et al., "Environmental Threats to Healthy Aging," (Greater Boston Physicians for Social Responsibility, The Science and Environmental Health Network, 2008), 26.

accessing suitable health care and nutrition more challenging, especially for individuals in lower income brackets. Finally, higher rates of diseases, like HIV and AIDS, that impact immune response, are frequently found in lower income communities of color. Rates of new HIV infection among African Americans are 7 times higher than those among whites, and for Latinos are 2.5 that of whites.¹³⁸ Persons with compromised immune systems will be especially susceptible to disease, and have much greater difficulty recovering from affronts to physical health.

General Toxic Hazards

I will next look at some health hazards in the representative community that are similar to those faced by persons in low-income communities in general. Many are associated with poverty or lack of access to social goods, making them endemic to such communities.

Indoor sources of pollution are significant and can range from asbestos particles created by insulation to the lead used in paint and fumes released by common household cleaning products. While some particularly dangerous substances, like asbestos and lead, are no longer used in housing, low-income persons are more likely to live in older or less well-kept residences, where these older materials are still present.¹³⁹ Asbestos insulation can begin to release greater quantities of fibers into the air as it breaks down, leading to

¹³⁸ Centers for Disease Control and Prevention, Department of Health and Human Services, <http://www.cdc.gov/hiv/hispanics/resources/factsheets/hispanic.htm>.

¹³⁹ There is also a considerable problem with lead paint in older homes. Ingesting lead can have considerable impact on cognitive development, and chipped or peeling paint can present a desirable food source to very young children.

respiratory problems,¹⁴⁰ and lead paint can dry, chip, and turn into dust, becoming a significant hazard for young children, who tend to place objects of interest in their mouths. Lead exposures are linked to adverse neurological outcomes that can extend over the course of a lifetime.¹⁴¹ Finally, many residences in low-income communities may have antiquated plumbing systems that release heavy metals into the drinking water.

Other significant indoor pollution can result from the chemical substances used in the construction of household items. In particular, the chemicals used in fire retardants, brominated ethers, are known to operate as endocrine disruptors and may have particularly dangerous effects on developing fetuses.¹⁴² Many common household objects, like furniture, use fire retardants, which release polybrominated diphenyl ethers (PBDEs) into the air as the products wear. This creates a special problem for lower income residences, where owners may not have the financial means to replace older and worn furniture, or may only be able to afford furniture that is already worn. Studies have shown that body burdens of PBDEs tend to be high for children, but especially for children of color living in low-income families.¹⁴³

¹⁴⁰ And possibly to mesothelioma if the exposure is great enough, though these diseases are usually associated with workplace exposures.

¹⁴¹ Liu, Goyer, and Waatkes, "Toxic Effects of Metals."

¹⁴² Exposure to endocrine disruptors *in utero* is linked to increased numbers of stillbirths, low birth weights, improper development of sexual organs, and, as with DES, vaginal cancers and reproductive challenges for adult women who were exposed *in utero*. (Paul M.D. Foster and Jr. L. Earl Gray, "Toxic Responses of the Reproductive System," in *Casarett and Doull's Toxicology: The Basic Science of Poisons*, ed. Curtiss D. Klaassen (New York, NY: McGraw-Hill Medical, 2008), 787-89.) Bisphenol A, which has recently gained great popular attention because of its estrogenic effects, operates in much the same way.

¹⁴³ Ami R. Zota, Gary Adamkiewicz, and Rachel A. Morello-Frosch, "Are PBDE's an Environmental Equity Concern? Exposure Disparities by Socioeconomic Status," *Environmental Science and Technology* 44, no. 15 (2010).

Finally, people may face hazards to health in the workplace. Persons with limited financial means are more likely to look for work in industry or mining, where they are more likely to face hazardous exposures. Such exposures can lead, independent of extra-work exposures to negative health outcomes. For example, if a person works in a factory producing plastic products, she may face exposures to vinyl chloride. Over the long term, exposures to this substance can lead to liver damage and even hemangiosarcoma, as well as autoimmune problems.¹⁴⁴

Representative Community

The previous pages have outlined exposures and susceptibilities common to many low socio-economic communities of color and now I'd like to turn to what sets our "EJ community" apart from similar, but not environmentally impacted, communities. In constructing this community, I will look at some of the information available about the community of Westside San Bernardino, which is where I conducted the bulk of my research. Demographically, Westside San Bernardino is 62% persons of Latino descent, 16% of African American descent, and 16% of White (non-Latino) descent. Of these, less than 50% of adults over age 25 have completed a high school level of education, and over 1/3 of families live below the poverty line.¹⁴⁵ In this community, there are 15 schools and

High levels of PBDEs have also been reported to increase the length of time it takes for women to become pregnant. (See: Kim G. Harley et al., "PBDE Concentrations in Women's Serum and Fecundability," *Environmental Health Perspectives* 118, no. 5 (2010).)

¹⁴⁴ Peter S. Thorne, "Occupational Toxicology," in *Casarett and Doull's Toxicology: The Basic Science of Poisons*, ed. Curtiss D. Klaassen (New York: McGraw-Hill Medical, 2008), 1277-79.

¹⁴⁵ Data taken from: United States Census Bureau, "Population Factfinder," <http://factfinder.census.gov>.

19 child-care centers, all of which house or attract residents who face special vulnerabilities due to age or medical history.¹⁴⁶ Our representative community will be similar, with nearly 2/3 of the residents are persons of color, and who are largely of low socio-economic status with limited education. The community exists on the east side of a small city. Significant industrial development took place here in the early part of the Twentieth Century, although many of these earlier facilities have been closed for decades. While new industry has moved into the community, with this have come some less desirable facilities.

Residents of this community suffer from many of the “general” exposures due to household, commercial, and workplace sources, and will be subject to challenges related to socio-economic status, access to social goods and the individual susceptibilities already outlined. What sets this community apart from similarly situated communities is the specific environmental impacts residents face. These impacts can take a variety of forms. Although many of the most memorable environmental health disasters resulted from singular sources or events, these may be less typical.¹⁴⁷ As I have noted, EJ communities do not typically experience one-time, short-term exposures, but long-term exposures to a variety of hazardous substances. Thus, residents struggle with the

¹⁴⁶ Hector Castaneda et al., "Health Risk Assessment for the BNSF San Bernardino Railyard," (California Environmental Protection Agency: California Air Resources Board, 2008).

¹⁴⁷ Examples like the Love Canal disaster, or the events chronicled in the film *Erin Brockovich* fit this model more closely. I do not intend to dismiss the severity of such events, but merely to suggest that they lie outside the scope of what I will be discussing. The recent anniversary of the Bhopal disaster reminds us of the extraordinary toll individual events can take.

challenges of contamination and recontamination over extended periods of time, perhaps entire lifetimes.

With this in mind, our exemplary community should house multiple types of commercial and industrial facilities, producing multiple types of substances, as well as additive doses of certain substances. Although I will take some of my guidance in describing this community from the Westside San Bernardino, I will depart from this model in some respects. In particular, while the bulk of the exposures residents of San Bernardino face are related to activity associated with the Burlington Northern-Santa Fe Railyard, our representative community will face a wider array of hazards.

I will begin by stipulating that the representative community houses a distribution facility (like a large storage facility). This, as well as the other commercial and industrial facilities I will discuss later, will result in increased truck traffic, leading to greater contributions of diesel particulates, which include a mixture of many hazardous chemicals. Exposures to these substances are linked to a variety of health problems, ranging from difficulty breathing to lung cancer.¹⁴⁸

In addition to the air pollution created by truck and other traffic, many airborne emissions are the result of industry and manufacture. These activities are also linked to other forms of particulate pollution, but one of the greatest areas of concern is with industrial facilities that release heavy metals into the atmosphere. As noted, exposures to heavy metals can have really significant health impacts, especially for children. I will stipulate that there are a number of industrial facilities in the community. One of these is

¹⁴⁸ US Environmental Protection Agency, "Health Assessment Document for Diesel Engine Exhaust."

a company that produces chemicals for agricultural use. Another is a lead acid battery lab, which emits lead particles into the surrounding air.

This leads to the next source of concern, as we should also look to the ground beneath the residents' feet. With this in mind, I offer that there is at least one solid waste facility in the community. A quantity of waste has leached into the soil, creating a small, but not insignificant, danger to residents, particularly children. As I noted, children face special concerns from contaminated soil, as they are closer to the ground than adults and tend to play outside and put things in their mouths. While linked to potential health risks, proximity to waste facilities can also come with other disadvantages, including ambient odors and fear of possible outbreak. Noxious odors can make life unpleasant for nearby residents regardless of toxicological effects. This can cause stress, which itself plays a significant role in exacerbating or accelerating the effects of disease.

Additionally, if we assume that the representative community had been an industrial center for quite some time, it is likely that the ground will be contaminated with waste and runoff from previous operations. I will stipulate that there is considerable soil pollution from these earlier industries, including the remnants of a chemical manufacturing facility from the mid-late 20th century. In addition to causing problems for children, soil pollution can also leach into the groundwater, and make its way into the water entering people's homes for drinking and other purposes.

To sum up, our representative community will have a majority of residents who are people of color, and who are economically and educationally disadvantaged. In large part due to this, residents will have few opportunities for purchasing nutritious food and

will have access to limited social and recreational space. The especially susceptible subgroups in the community will consist of children, the elderly, and the diseased or disabled. The community will be home to a number of industrial and commercial facilities creating significant levels of air pollution, as well as noise pollution, traffic, and waste. Due to their low socio-economic status the residents will also be exposed to a variety of dangers within their own homes, coming from household items and building materials.

Ultimately, we must acknowledge that people will vary in their ability to respond to chemical exposures, which is part of the reason that susceptibility presents such a significant issue for policy decisions. While a particular substance might only have a small chance of causing a disorder, the chances of an individual developing that disorder may be increased by her special susceptibilities, based on age, stress level, background exposures, general health, access to healthcare, access to nutrition, and a host of other influences. From a public health perspective, we can't neglect the importance of these additional factors, as they may play a decisive role in whether or not exposures will lead to adverse affects. Practically speaking, it may be very difficult to conduct epidemiological studies that take all of these factors into consideration, but justice dictates that we need, at the very least, to acknowledge the role they play.

The Crux of the Problem

I have outlined the numerous vulnerabilities and challenges residents of EJ communities face, but to address all of these issues in a single work is perhaps too

substantial a challenge. Thus, I will focus primarily on those environmental hazards that are special to EJ communities. While we might view many communities of low socio-economic status as being dumped on, for EJ communities this is a literal truth. In a sense, while many communities face similar vulnerabilities and general hazards to health, EJ communities also face exposures from an additional set of environmental sources, like factories, waste dumps, and warehouses.

We can think about the challenges that such communities face as both layered on top of one another, but also as existing in a sort of constellation, where the social challenges and health susceptibilities experienced by low income persons of color can make them more likely to face exposures to the toxicants created by environmentally hazardous facilities and also more susceptible to experience harms as result of these exposures. When coupled with other exposures persons are likely to face (like PBDEs and other substances likely to be in homes because of poverty), the health effects could be quite significant. All of these factors work together, and it is the interplay between them that makes addressing environmental injustices so challenging.

Part of the goal is to investigate when communities go from being home to a number of “environmental nuisances” to having real environmental problems. Part of our explanation has to do with negative health outcomes, as it seems clear that when exposures impact a person’s health in an especially negative way, there is cause for concern. However, there are also some other methods that can be used to evaluate and understand such injustices, and I will return to these questions later in my discussion of John Rawls and Amartya Sen.

5. John Rawls: Justice as Fairness

John Rawls's picture of "Justice as Fairness", as sketched out and elaborated over the course of his prolific career, provides a detailed picture of what makes a just liberal society, based in principles of justice. These principles determine what justice requires, and make possible a system both for describing just institutions and the just legislation resulting from those institutions. In what follows, I begin by laying out the foundational aspects of this theory, and then provide an evaluation and discussion of the challenges presented by environmental injustices utilizing a Rawlsian framework. Given what's been established in previous chapters, we have a framework for thinking about the impacts of environmental insults, and I aim to show that these hazards can lead to failures to achieve Rawlsian ideal justice.

In this chapter, I describe how health impacts challenge the opportunities guaranteed by Rawls's second principle of justice. I suggest, following Norman Daniels's extension of Rawls, that failures to obtain good health limit the full pursuit of careers and other opportunities; access to which is protected by fair equality of opportunity. The next chapter extends this discussion by showing that environmental injustices not only challenge opportunity, but impact a person's ability to adequately develop and exercise the moral powers required for political personhood, challenging us to take seriously the relation between environmental concerns and full integration into social and political life.

The Rawlsian Project and Principles of Justice

The plan of the Rawlsian project is the formulation of a theory of justice for contemporary liberal democratic systems marked by significant pluralism about moral beliefs and notions of the good. Essentially, the goal is to locate a fundamental conception of justice that will guide the development of just political and social institutions, and be endorsed by diverse groups. In focusing on liberal democracies, Rawls already assumes certain values, like rights and liberties, will be valued.¹⁴⁹ Ultimately, the conception of justice chosen must be one that the citizens of the state can, and actually will (by virtue of their development as political agents,) endorse. Otherwise, it will have very limited utility.

To develop his argument, Rawls imagines the hypothetical circumstance of the original position. Here, parties are asked to deliberate and reach a unanimous decision about the best principles of justice for their society from among a finite number of sets.¹⁵⁰ The principles chosen determine how society will develop at later stages, and create the boundaries of justice for the entire society. While parties concerned with self-

¹⁴⁹ Importantly, the situation Rawls is describing here is perfect justice for the easiest case. Environmental justice presents a huge departure from the easy case, especially given the myriad challenges and difficulties that heavily impacted communities face. This is something that we should track in the discussion of a Rawlsian conception of justice as it relates to the environmental justice.

¹⁵⁰ John Rawls, *A Theory of Justice*, Rev. ed. (Cambridge, Mass.: Belknap Press of Harvard University Press, 1999), 23.

While envisaging such parties is a useful tool, we must also note that Rawls is conceiving of this as a thought experiment that will provide guidance for thinking seriously about the requirements of justice. Thus, even if we were to imagine that the deliberative process involved only one person, the outcome should still be the same.

preservation, and thus are not directly concerned with the future prospects of others, they should be concerned with the best interests of society at large.

To meet this goal, Rawls installs rather stringent conditions on participants in the Original Position. He begins by assuming that they will operate behind “a veil of ignorance”. Parties must abstract themselves from the “contingencies of the social world” and enter deliberation as the “free and equal persons”. They do not know anything about themselves or those they represent, including their socio-economic status, notion of the good, generation, and personal assets. Generation is of particular importance, as we may wish to utilize a notion of intergenerational justice is important for environmental issues, and the fact that parties who are behind the veil of ignorance will not know in which generation they belong, they will necessarily desire a notion of justice that does not privilege earlier or later generations over each other.¹⁵¹

Importantly, parties are also ignorant about the society for which they are establishing terms of justice, including the form of political system, the historical moment, etc...¹⁵² Parties are also “mutually disinterested”, meaning that they are not concerned with each other’s well being, but simply their own and that of the persons they represent.¹⁵³ Finally, because the parties will pursue their own self-interest in society,

¹⁵¹ ———, *Political Liberalism*, Expanded ed., Columbia Classics in Philosophy (New York: Columbia University Press, 2005), 81.

Generation is of particular importance, as we may wish to utilize a notion of intergenerational justice is important for environmental issues, and the fact that parties who are behind the veil of ignorance will not know in which generation they belong, they will necessarily desire a notion of justice that does not privilege earlier or later generations over each other.

¹⁵² Rawls, *A Theory of Justice*, 23.

¹⁵³ *Ibid.*, 12.

Although they do not, at this point, know what their personal ideas of the good are.

they will desire a larger share of what Rawls calls “primary goods”, which will enable them to achieve their ends.¹⁵⁴

These primary goods deserve further elucidation. First are the basic liberties, which make it possible for individuals to develop and pursue their own conceptions of the good (involved here are liberties like speech and religion/conscience). Second are freedom of movement and choice of occupation, which enable citizens to work toward different personal and career goals. Third are the “powers and prerogatives of offices and positions of responsibility”, which allow for the development of civic capacities. Fourth are income and wealth, which are necessary means for working toward a variety of ends. Last are the social bases of self-respect. Each primary good is desirable as a basic requirement of human social life, and for enabling the achievement of individual goals. The goods I have listed are only the social primary goods. There are natural goods, related to specific natural capacities, whose distribution is not determined by society. Thus, their distribution is not a societal concern, and not determined by parties in the original position.¹⁵⁵ As Rawls suggests, “the index of well-being and the expectations of representative men are specified in terms of primary goods....” because individuals “desire certain things as prerequisites for carrying out their plans of life.”¹⁵⁶ The principles upon which Rawls ultimately settles can be understood in terms of their

¹⁵⁴ Ibid., 123.

¹⁵⁵ ———, *Political Liberalism*, 181.

¹⁵⁶ ———, *A Theory of Justice*, 348.

fairness in distributing these primary goods, in the service of preserving the capacities associated with the moral powers.

In choosing principles, parties are allowed to know only those facts that directly relate to their choosing the best set of principles, including general facts about human psychology and political society. They cannot act for personal benefit, as they do not yet know what would benefit them.¹⁵⁷ The list of principles for creating just institutions is constrained by an intuitive conception of justice that is “general in form and universal in application” and “publicly recognized as a final court of appeal for ordering the conflicting claims of moral persons”.¹⁵⁸ From this list, Rawls thinks that one set will present “everyone’s best reply, so to speak, to the corresponding demands of others.”¹⁵⁹ As parties are behind the veil of ignorance, they should pick principles that will aid them regardless of what they discover when the veil is lifted. This means that the principles should allow for the highest share of primary goods for all citizens, enabling them to attain their goals, regardless of who they happen to be.¹⁶⁰

Rawls argues that the best option for protecting individual interests is a set of two, lexically ordered, principles of justice. These are:

- 1: Each person has an equal claim to a fully adequate scheme of equal basic liberties, which scheme is compatible with the same scheme for all;

¹⁵⁷ Ibid., 119.

¹⁵⁸ Ibid., 117.

¹⁵⁹ Ibid., 103.

¹⁶⁰ In this way, the original position can be seen as a means for testing the justice of the sets of principles, as well as a means for testing the justice of individual views.

and in this scheme the equal political liberties, and only those liberties, are to be guaranteed their fair value.

2: Social and economic inequalities are to satisfy two conditions: first, they must be attached to offices and positions open to all under conditions of fair equality of opportunity; and second, they are to be to the greatest benefit of the least advantaged members of society.¹⁶¹

Rawls thinks that anyone situated in the original position would agree to these principles, as they enable every citizen to possess the greatest share of primary goods, thereby allowing each to pursue a conception of a “worthwhile human life”.¹⁶² While other ways of structuring society might create greater wealth for particular persons or groups of people, these principles ensure fairness, giving everyone a roughly equivalent shot at living the life they desire.

The principles are constrained by fairness of distribution, as well as by efficiency. Efficiency is here understood as Pareto Efficiency, where it would be impossible to “redefine the scheme of rights and duties, so as to raise the expectations of any representative man (at least one) without at the same time lowering the expectations of some (at least one) other representative man.”¹⁶³ While many distributions would allow for an efficient system, Rawls argues that most will not be just, as they will fail to recognize the inviolability of personhood which stands at the heart of the Rawlsian view.

¹⁶¹ Rawls, *Political Liberalism*, 5-6.

I have taken the formulations from *Political Liberalism* as it is more recent than *A Theory of Justice*. Rawls replaces the notion of maximization of liberties with the idea that they should be part of a “fully adequate scheme”. Additionally, this particular formulation places special emphasis on the fair value of equal political liberties, which Rawls takes to be part of the meaning of the principles of justice, but does not always recognize in his principles of justice.

¹⁶² Ibid., 302.

¹⁶³ ———, *A Theory of Justice*, 61.

Thus, even if there was an efficient scheme where indentured servants could not be made better off without making some other group worse off, this would not be just, because the class of indentured servants would receive an unfairly small portion of the total social benefits.¹⁶⁴

As the principles of justice are lexically ordered, the first takes priority. Thus, “infringements of the basic equal liberties protected by the first principle cannot be justified, or compensated for, by greater social and economic advantages.” The different basic liberties will relate to the moral powers in different ways. In some cases, liberties relate directly to the two moral powers, while some of the liberties are procedurally valuable in their relationship to the fundamental structure. Others only become valuable in the context of other guaranteed liberties, or require the existence of other liberties in order to become valuable themselves.¹⁶⁵ The liberties protected by the first principle include freedom of thought, liberty of conscience, political liberties, integrity of the person, and legal rights and liberties.¹⁶⁶ These allow citizens to function freely in society and attain individual goals. They are also designed to enable the development and exercise of the two moral powers, which are the foundational attributes of citizens as political persons.¹⁶⁷

¹⁶⁴ Ibid., 61-62.

¹⁶⁵ Ibid., 54.

¹⁶⁶ ———, *Political Liberalism*, 291.

¹⁶⁷ Ibid., 309.

For example, Rawls thinks that liberty of conscience requires freedom of thought and association in order to be sensible as a liberty.

The schema of basic liberties Rawls focuses on is that which is most adequate for all citizens.¹⁶⁸ To achieve this, no single liberty can be absolute, and not all will necessarily be weighted equally. Further, basic liberties can only be limited in cases of conflict with other basic liberties and only to create or maintain the most adequate scheme of liberties for everyone. Thus, the construction of a fully adequate scheme may not be the same for every society or every time period.

Rawls also provides a requirement of the “fair value of equal political liberties”, highlighting the special significance of these liberties. While all liberties should be distributed fairly, Rawls worries that the value of exercising political liberties could become merely formal. In such circumstances, persons wouldn't be prevented from exercising political liberties, but wouldn't be fully able to express them because of social factors like the inability to attend public fora or a lack of those tools needed for civic engagement. Additionally, he wants to ensure that citizens will have roughly equal chances of influencing governmental policy, as well as equal chances of attaining positions of authority.¹⁶⁹ These considerations point to the special role of civic participation, valued both in itself as well as for the social benefits it provides. Rawls's second principle has the goal of ensuring that all persons will benefit from any inequalities in society. As he writes in *A Theory of Justice*, “it must be reasonable for each relevant representative man defined by this structure...to prefer his prospects with

¹⁶⁸ Adequacy is defined as ensuring that all persons can exercise particular liberties within the “central range of application”, or their most important use. (Ibid., 297.)

¹⁶⁹ John Rawls and Erin Kelly, *Justice as Fairness : A Restatement* (Cambridge, Mass.: Harvard University Press, 2001), 149.

the inequality to his prospects without it.”¹⁷⁰ These representative persons are defined as those who hold the “various social positions, or offices established by the basic structure.”¹⁷¹ What these representative persons can achieve in life is determined by the distribution of goods, and it is assumed that increasing the expectations of any particular representative person will have the affect of increasing or decreasing the expectations of some other representative person. Representative persons are not actual “named” persons, but representatives of types of persons. Thus, we are not talking about providing goods to particular individuals who need those goods, as this would be extremely difficult to accomplish from the standpoint of the original position. It might be worth asking whether this is a good representation of the relationships that exist between individual representatives in particular societies. Rawls assumes here, and in his discussion of the difference principle, that the fortunes of the individual parts of society are linked in ways that make changes to particular groups or individuals impact the lives and prospects of many other groups and persons.¹⁷² Importantly, while the system is not egalitarian, all inequalities must be preferable to some other distribution of goods.

The second principle addresses inequality in two ways. First, it requires that everyone possess “fair equality of opportunity” to obtain offices or positions to which are attached power, wealth, prestige, and other desirable qualities. Denying access to specific positions and careers is fundamentally unjust, as it deprives citizens of “one of the main

¹⁷⁰ Rawls, *A Theory of Justice*, 56.

¹⁷¹ Ibid.

¹⁷² Ibid.

forms of human good.”¹⁷³ The conditions of fair equality of opportunity create a system of pure procedural justice, without reliance on some external idea of justice.¹⁷⁴

Essentially, this means that the system should be able to check itself, and no external standard will be required to ensure proper results. For Rawls, once the principle is in place and institutions have been created in accordance with it, any outcome of that system must be just.

The second part of the second principle creates an economic system where inequalities are distributed in the interests of all representative persons. Known as “the difference principle”, it states that inequalities in either social or economic status are only acceptable when they benefit those representative persons who are the “least advantaged”. This “least advantaged” group is defined as those “least favored by each of the three main kinds of contingencies”, which are social contingencies, natural endowments, and simple luck.¹⁷⁵ This group is typically the most impoverished, and marked by other forms of deprivation. According to the difference principle, if the accumulation of great wealth by a certain portion of the society will help everyone, through the general economic advantages resulting from living in a wealthier state, such an arrangement would be just (as it benefited the least advantaged group). However, when the accumulation of wealth by a part of the population ceases to benefit that

¹⁷³ Ibid., 73.

¹⁷⁴ Ibid., 75.

¹⁷⁵ Ibid., 83.

society's least well-off members, increases in wealth for any representative person would no longer be considered just.¹⁷⁶

Before moving to a closer discussion of the challenges faced by EJ communities, I would like to return to the “contingencies” just discussed. These play an important role in thinking about justice, as Rawls thinks that one of the goals of a just system is to limit their impact on individual lives. Contingencies are facts about persons over which they exert no control and appear arbitrary from a moral point of view. For this reason, they shouldn't drastically impact life prospects if possible. For example, while I may control whether or not I choose to become a smoker, I had no control over whether or not my mother smoked cigarettes when I was in utero. Both might significantly impact my health, but my inability to influence whether or not my mother was a smoker plays a role in our evaluation of any resulting challenges to health. It is these aspects of ourselves that we are unable to control that Rawls describes as contingencies.

Rawls identifies the three forms of contingency as social contingencies, natural endowments, and luck. Social contingencies include facts like an individual's socio-economic class, family, and geographical location.¹⁷⁷ We cannot control whether we were born into a wealthy or less wealthy family, nor whether that family is supportive of our

¹⁷⁶ It should be noted that such a system allows for a considerable amount of inequality. Rawls assumes a relationship of chain connection between the various positions, such that “if the greater expectations for entrepreneurs benefit the unskilled worker, they also benefit the semiskilled.” Further, “expectations are close-knit: that is, it is impossible to raise or lower the expectations of any representative man without raising or lowering the expectation of every other representative man, especially of the least advantaged.” (Ibid., 70.)

¹⁷⁷ Geography is worth noting, as different options are available to those who live in large urban areas than those who live in sparsely populated rural settings. Additionally, climate, access to green space, and other factors may impact individual lives in fairly significant respects.

interests. However, this can have an extraordinary degree of influence over the course one's life takes. For example, if someone is unable to attend high school because she must work to support herself and her family, this will have lasting impacts on her prospects, and will likely limit the career and other opportunities available to her later on. Such a negative outcome seems undeserved. Alternatively, a person born into a family with considerable wealth and social status may seem equally undeserving of the benefits she receives, even though she faces a better outcome.

Natural endowments are equally arbitrary. Aspects of a person like intelligence, motivation, and physical ability are allotted based on chance and are in no sense the result of individual choice or desire.¹⁷⁸ Morally speaking, both natural and social endowments are on a par, as Rawls states that once "we are troubled by the influence of either social contingencies or natural chance on the determination of distributive shares, we are bound, on reflection, to be bothered by the influence of the other. From a moral standpoint the two seem equally arbitrary."¹⁷⁹

Finally, there is simple luck. Two individuals who are similarly situated with regard to socio-economic status and natural ability may still live very different lives due to chance or simply being at the right or wrong place at the right or wrong time. Thus, if I happen to accidentally find a winning lottery ticket on my walk home from work, this doesn't necessarily entail that I deserve the wealth that I will receive and the opportunities that it will create for me. I may be entitled to them by virtue of possessing

¹⁷⁸ Of course, persons can choose to develop their specific talents, or work to overcome certain physical challenges. However, we are limited by aspects of our psychological makeup and physiology.

¹⁷⁹ Rawls, *A Theory of Justice*, 64-65.

the ticket, but this seems a far cry from suggesting that there is something like the moral sense of “desert” at play.

Because these aspects of a person’s life are arbitrary from a moral point of view, Rawls designs his system to limit their effects on persons’ lives. As he suggests, the “liberal interpretation of the two principles seeks, then, to mitigate the influence of social contingencies and natural fortune on distributive shares. To accomplish this end, it is necessary to impose further basic structural conditions on the social system.”¹⁸⁰ Since society is in some way responsible for the distribution of social contingencies, institutions are better situated to work against them when they seem unfair.¹⁸¹

Many of the challenges facing residents of EJ communities are deeply arbitrary. Just as I had no control over whether or not my mother was a smoker while I was *in utero*, people born into unhealthy communities had no control over where they were born. When a person is raised in a community with considerable soil and water contamination due to waste runoff from a nearby toxic dump, it seems unfair that this should have serious effects on her success in life. Because she could not choose this aspect of who she is, in the same way that she could not choose whether she was born into a wealthy or impoverished family, society should work to alleviate the resulting inequalities. The Fair Equality of Opportunity Principle, which informs the latter part of this chapter, is intended to do just that.

¹⁸⁰ Ibid., 63.

¹⁸¹ As opposed to natural contingencies or luck, which are meted out independent of social arrangements.

The Fair Equality of Opportunity Principle

Rawls's fair equality of opportunity principle, or FEOP, works to ensure fair access to positions of social advantage. As it is lexically prior to the difference principle, conflicts between the two should be settled with preference given to concerns of opportunity.¹⁸² This is in the spirit of Rawls's fundamental claim that "each person possesses an inviolability founded on justice that even the welfare of society as a whole cannot override."¹⁸³ As with the freedoms protected by the first principle, the FEOP ensures that citizens will be able to express and pursue their particular vision of the good, despite the encumbrances of social contingencies.

Essentially, the FEOP works to ensure that equally capable and motivated persons have the same chances to achieve social goods in the form of employment and career opportunities. Instead of merely formal equality of opportunity, or "careers open to talents", where individuals will have the same chances relative to similarly situated individuals, fair equality of opportunity requires that positions be actually, and not formally, open to all. For Rawls, the idea of a "fair chance" entails that

supposing that there is a distribution of native endowments, those who have the same level of talent and ability and the same willingness to use these gifts should have the same prospects of success regardless of their social class of origin, the class into which they are born and develop until the age of reason.¹⁸⁴

¹⁸² Thus, if there were a system of distribution that would make everyone better-off financially, but would limit opportunities for some persons, it would be unjust.

¹⁸³ Rawls, *A Theory of Justice*, 3.

¹⁸⁴ Rawls and Kelly, *Justice as Fairness : A Restatement*, 44.

Instead of stopping with the idea that individual achievement, given individual ability, should not be negatively impacted by social status, we also need mechanisms to ensure the actual availability of opportunities. This involves not only the removal of barriers to achievement, but the installation of structures that help the socially disadvantaged, yet naturally advantaged, to overcome the limitations they may face.

Thus, Rawls claims that “in all parts of society there are to be roughly the same prospects of culture and achievement for those similarly motivated and endowed.”¹⁸⁵ Equalizing prospects requires “a framework of political and legal institutions that adjust the long-run trend of economic forces so as to prevent excessive concentrations of property and wealth, especially those that lead to political domination”.¹⁸⁶ Because wealth can so greatly impact a person’s life prospect, it needs to be taken seriously in thinking about opportunity. This creates further limitations on those inequalities that are allowed by the Difference Principle, as it restricts concentrations of wealth to an even greater degree.

In addition, fair equality of opportunity requires “equal opportunities of education for all regardless of family income.”¹⁸⁷ Educational systems tend to favor the wealthy, as public educational systems are often funded through local taxes and state and federal grants. Thus, communities with residents in high income brackets will likely to have more tax money available to fund public schools, while communities where incomes are

¹⁸⁵ Ibid.

¹⁸⁶ Ibid.

¹⁸⁷ Ibid., 44.

lower are more likely to rely heavily on resources from state and federal funds, which are limited and must be split among many school districts. The system Rawls envisages is one where funding is distributed to mitigate the effects of relative wealth or poverty on individual prospects. Such rethinking of the education would seem to be required at every level, from early childhood education through advanced study. Collegiate institutions would need to become more open to students from poorer backgrounds, which would require greater public funding, as well as better systems of grants and fellowship opportunities. The same should also be true for more advanced study, including professional and academic degrees. In some respects, it is at this level of achievement that all of the other educational structures aim. Because the FEOP is intended to equalize opportunities for achieving positions that carry with them considerable social value, it is necessary that the most advanced degrees be open to all who possess the motivation and ability to complete them.¹⁸⁸

Importantly, the FEOP is not intended to mitigate the effects of natural endowment, as it is assumed that natural suitedness plays a role in whether a person should have the opportunity to advance in a given field. Thus, Rawls is not endorsing the view that every citizen should be able to pursue any career, but that any citizen should be able to pursue that career for which her natural talents make her a good candidate, equivalent to others who are equally endowed and motivated. Adjudicating these natural talents may present some difficulties, and assessing the circumstances that make two individual citizens equally situated with regard to natural endowments may also be a

¹⁸⁸ Clearly, this would require that the system of “legacy” no longer be in place at top-tier institutions.

difficult task. While everyone deserves access to an excellent education, regardless of socio-economic status, race, ethnicity, comprehensive view, or geographical location, the state may have different obligations to persons based on their desires, motivation, and abilities. The state needn't pay for everyone who thinks it would be fun to be a lawyer to go to law school, but entrance examinations (which will be fair as all will have had adequate education), and other forms of testing can determine whether one has the aptitude for a given career, and thus determine who is deserving of such support.¹⁸⁹

It must be noted that the FEOP is relevant to the discussion of those jobs that are the most desirable, and thus especially competitive. Some are positions with political power or other jobs typically described as “good”, like being a lawyer, a doctor, an engineer, etc... However, there are numerous other positions that offer significant financial and social benefits and some that bring social benefits without matching financial opportunities.¹⁹⁰

Practically speaking, this means that if there are two individuals who have the same abilities and the same desire to become medical doctors, the fact that one is a white male from an affluent community, while the other is a woman of color from a much poorer community, should play no role in their chances of obtaining this goal. This requires institutional structures that provide both persons with the same possibilities and

¹⁸⁹ In our current world, there are significant concerns regarding the fairness of many forms of standardized testing. However, many of the concerns about testing stem from the fact that they appear to privilege certain races or classes, something that would be avoided if the FEOP obtained.

¹⁹⁰ Whether there are positions that bring great wealth without considerable social benefits is unclear. There are certain kinds of social respect that cannot be purchased, as is obvious from the fact that there are still doors that no amount of money can be used to open. On the other hand, becoming a reality TV star may or may not bring lasting social benefits. However, it would seem that the FEOP is likely not intended to allow everyone to have her own “15 minutes of fame”.

opportunities to prepare for entrance to medical school. This includes access to education already outlined, as well as adequate time to prepare for the MCAT, books and support for study, and the prevention of the wealthier from using social and political clout to influence admissions. Although Rawls admits that some factors, like familial structure and support, cannot be changed, society should work to counteract the challenges these present.

Environmental Injustice and Challenges to Fair Equality of Opportunity

Given this picture of what justice requires, many safeguards will be required to ensure that its demands are met. The question that motivates my concern is as follows: Will challenges to health associated with life in EJ communities limit opportunities in ways that counteract fair equality of opportunity? I believe that the answer is unqualifiedly yes.

To show this, I will follow partially in the footsteps of Norman Daniels, who extends the Rawlsian project to discuss health and health care. Rawls limits his discussion of citizenship or political personhood to those who are capable of being “normal and cooperating members of society over a complete life”.¹⁹¹ Rawls’s theory is intended only to apply to citizens who meet these criteria, and his discussions of poor health relate to temporary infirmities that can be easily rectified. In particular, Daniels is concerned with the fact that a citizen’s opportunities can be greatly impacted by her

¹⁹¹ Rawls, *Political Liberalism*, 81.

health, particularly when the health challenges she faces are long-term and not easily remediable. His goal is to show how a broadly Rawlsian framework can be adjusted to accommodate the ill and the disabled, so that they are given a fair set of opportunities.

Daniels focuses on the FEOP, and argues that we can extend discussions of opportunity to include health, insofar as health is determinative of life possibilities. If we assume that Rawls's general theory is correct, discussing health can provide "one plausible justificatory framework for relying on an objective scale of well-being that includes health needs and for our having obligations of justice to protect opportunity (and therefore health).¹⁹² Essentially, Daniels imagines what a robust notion of opportunity would require, given the impacts that illness and chronic disease or disability can have on opportunities. Daniels focuses on what he calls the "social determinants of health", which extend beyond obvious considerations like access to health care, to include a much wider range of the things people "need"¹⁹³ to live lives free from disease, dysfunction, and other challenges.¹⁹⁴ This will include access to nutrition, reasonably healthful living and working conditions, a healthful lifestyle, preventative, curative, rehabilitative, and

¹⁹² Norman Daniels, *Just Health : Meeting Health Needs Fairly* (Cambridge ; New York: Cambridge University Press, 2008), 47.

¹⁹³ Daniels focus on "needs" seems to support the view that we can understand all of the factors that play in our conception of health as primary goods. However, he ultimately argues that they do not fall under this category.

¹⁹⁴ Daniels, and others who focus closely on issues of health, must address considerations of what disease and dysfunction are at the biological level. . Defining what counts as a departure from normal, whether or not there is some normative content to the definition, stands beyond the scope of my current work, and I can make the claims I need while remaining agnostic on the definition of health is or what it means to "be in good health".

compensatory care, social support services, and other features.¹⁹⁵ While this list is meant to capture a broad range of social goods, it is limited to those goods related to biological functioning. However, the idea is expansive enough to include factors that may impact individual health, but are not directly related to disease or access to health care.¹⁹⁶

The departures from health with which Daniels is concerned are not simply colds or short-term illnesses, but challenges to health that greatly affect a person's life over the long-term, much like the negative health outcomes associated with living in EJ communities. In his later work, Rawls acknowledges the importance that medical care can have in ensuring person's a full capacity as a normal member of society, which indicates his understanding of the important role that protecting health plays. As he suggests, medical care is "necessary to underwrite fair equality of opportunity and our capacity to take advantage of our basic rights and liberties..."¹⁹⁷ The goal of this medical

¹⁹⁵ Daniels, *Just Health : Meeting Health Needs Fairly*, 42-43.

¹⁹⁶ However, I will not be taking on Daniel's view in its entirety, as I think I can achieve my goals without doing so. Although his work is interesting, I believe that he goes so far beyond the Rawlsian project as to be somewhat unhelpful for my current project.

One important question that needs to be addressed is whether consideration of non-ideal citizens would impact the kinds of principles chosen by parties in the original position. Since Daniels himself begins with a discussion of Rawls's contractors, might they too choose differently if provided with other information about the citizens they are supposed to represent, given that they are no longer assuming that each of them will be able to fully exercise the two moral powers of rationality and reasonability over a full life? I believe that this creates a problem for Daniels's extension of Rawls. One cannot change important characteristics of the contractors without also anticipating the possibility that this might alter the choices they would make. Ultimately, while we might agree with Daniels that the requirements of health are intimately linked to those of opportunity, it might be the case that contractors would desire specific requirements for the protection of health in order to maintain not merely fair equality of opportunity, but basic participation in the civic realm through the exercise of the moral powers. While Daniels may be successful in arguing for the special moral significance of health, this may commit him to a much greater reinterpretation of Rawls than Daniels himself would find acceptable. For this reason, I am unsure about the usefulness of Daniels's picture as a theoretical starting point, despite my general agreement about his extension of some of Rawls's distributional concerns.

¹⁹⁷ Rawls and Kelly, *Justice as Fairness : A Restatement*, 174.

care is to restore people to full functioning in society, with a particular focus on equal access to opportunity.

In focusing on the FEOP, we need to interrogate how health can be determinative of life and career opportunities. Why might health be involved in fair equality of opportunity? To begin answering this question, we can look at challenges to fair equality of opportunity. For example, if it is unfair that low socio-economic status can challenge a person's ability to become a physician, why shouldn't we also say that it is unfair that a person who developed polio when her family couldn't afford vaccination also has limited career goals?¹⁹⁸

Alternatively, we can imagine that a health problem like chronic bronchitis from exposure to PM would make completing medical school difficult. In both cases, we can envision someone who is intellectually capable and motivated to become a doctor, and since we think that the social contingency at work in the economic case should be compensated for, why not in the medical case? The person raised in a community where she experienced significant PM exposure is no more responsible for the negative outcomes she faces than the person born into a family of low socio-economic status, and both seem equally deserving of efforts to combat negative consequences resulting from

Further, Rawls thinks that health is intimately involved in the development of the moral powers required for citizenship, which I will discuss in the following chapter.

¹⁹⁸ In his final work, Rawls does suggest that parents cannot deny the right of medical care to children (Ibid., 11.) Obviously, if she developed respiratory problems because she was a regular cigarette smoker, we might evaluate the case a little differently. The question of personal responsibility for choices that impact health is one I will return to in a later chapter.

these contingencies, especially given that socio-economic status likely plays a role in the EJ case as well.

Both face challenges related to the distribution of social goods. It seems that in both types of case, each person is equally deserving of prevention of harms to opportunity and help in equalizing the effects of contingencies over which they had no control.¹⁹⁹ When we ensure that a person who comes from a family of low socio-economic status has access to the same educational and advancement opportunities, we are giving her the means to achieve the same goals as someone with greater wealth. In the same way, we must ensure that persons who experience challenges to health are compensated for and given the means to access the same set of opportunities as those who do not face such challenges.

Importantly, the health effects related to environmental injustices are preventable, resulting from distributions of social goods and bads. While other negative health outcomes may be related to socio-economic status or other social or natural contingencies, the exposures persons living in EJ communities experience are not ones for which residents are “at fault”, but result from unfair distributions of hazards.²⁰⁰ For this reason, it seems especially important that various opportunities be protected.

Interestingly, the negative health outcomes under discussion do not result from a failure

¹⁹⁹ We are faced with a more difficult question when we imagine that health problems are the result of natural endowments. Thus, whether the state should equalize opportunity for a person with a heritable brain malformation is a different question. Rawls does not think that natural endowments should play a role in the distribution of goods, but are not something for which the FEOP should account. Daniels’s idea of “normal species functioning” can provide guidance for such questions, but this is somewhat outside of the range of my current discussion.

²⁰⁰ Although people might welcome certain exposures when they bring with them monetary rewards, such choices are importantly unfree, as I will show in later chapters.

to do something that will assist persons in achieving all possible life goals, but from the recklessness of another agent. This might make the failures of opportunity to which they lead especially distressing, because the challenges to good health they face are the result of a serious moral failing on the part of an individual agent or group of agents.

While something like chronic bronchitis may negatively impact opportunity, environmental injustices can lead to much more significant health challenges. Looking at the representative community from chapter 4, we find that residents are exposed to a wide variety of substances that can fundamentally alter aspects of a person's physical body, making certain career and other opportunities simply unavailable.

For example, if a person is exposed to lead *in utero*, and experiences the associated cognitive challenges, the kinds of things she can hope to accomplish in her life may be limited. This might seem a strange counterfactual to discuss, but imagine a person who would have been born with an IQ on the high end of the normal range, but because she has experienced exposures she is left with an IQ at the lower end of normal. Even though she is still within the normal range and capable of leading a full life, certain opportunities may be closed off that would otherwise have been available. Further, if we were to imagine that she had faced such extensive exposure that her IQ fell below the normal range, an even larger swathe of potential careers and choices would be inaccessible. In addition to cognitive challenges, lead exposure is also linked to a whole host of other disadvantages, including lifelong problems with motor function and behavior. In addition to reduction in IQ, she might face problems with impulse control

and problems with attention, all of which may make achieving career goals challenging, and will likely make the most desirable jobs simply out-of-the-question.²⁰¹

The challenges that persons in EJ communities typically face are not limited to exposures to singular substances, but frequently to multiple substances. This, coupled with the social challenges that residents of EJ communities tend to face makes the challenges to opportunity even more profound. Returning to the example of the person who was, because of exposures to metals, born with a much lower IQ (beyond the low end of the range) than she would otherwise have had, we might imagine further challenges she faces because of her family's social status or the community in which she lives. For example, if she has faced exposures that have led her to develop a lowered IQ, and then attends an underfunded school where she doesn't receive any additional help to counteract learning and behavioral problems, her opportunities will be limited even further. If we add other exposures, like PM exposures leading to respiratory and immune problems, we have a person who has faced a preventable reduction in her IQ, lacks the resources to get help with the challenges she faces in school and life, and is repeatedly sick from school or later work, because of PM-related illness. Such a person is not only unlikely to become a doctor, but will likely have difficulty in pursuing any substantial career.

This person might otherwise have been smart, motivated, and capable. She might have been interested in pursuing a medical career, *were it not* for the exposures she faced,

²⁰¹ See: Aimin Chen and Wendy Hessler, "Brain-Wide Chemical Changes Linked to Childhood Lead Exposure," *Environmental Health News* (2011).

and the constellation of social challenges that made her more susceptible and limited her ability to address or recover from the harms created by those exposures. She is situated much like someone from a working class family and wants to pursue medical school and has the talent to do so. This may seem a little more complicated than the sort of picture Rawls develops when describing equality of opportunity in terms of schooling or access to particular resources, but it is conceptually of the same nature. While Rawls asks us to wonder what, counterfactually, someone might have been able to accomplish had she had access to a different set of options over the course of her life, I am asking what opportunities an individual would have had in her possession had she not faced exposures during important stages of development. We can imagine that someone who was exposed *in utero* to lead, *would have been* more intelligent and capable of better social behavior had that exposure not occurred, in the same way providing better educational opportunities would have made it much easier for a person of low socio-economic status to obtain entry into medical school.

My goal in this chapter has been to establish that environmental injustices can present violations of the Fair Equality of Opportunity Principle, and I take it that they mirror the clear-cut case of difference in socio-economic class closely enough to be considered as such. Unlike her counterpart who hasn't experienced exposures that would limit her ability to function, and hence her opportunities, the individual who has been heavily exposed to lead will be unable to achieve certain goals due to reduced mental functioning. Alternatively, someone who has developed asthma may not find her

cognitive functionings severely impacted, but will certainly experience challenges that may limit the range of opportunities she can hope to attain.

Once it is shown that inequalities in distributions can impact a person's opportunities, we have a clear violation of the Fair Equality of Opportunity Principle, and hence, an injustice. On this view, the injustice exists because the limitations arise consequent to exposures. These limitations on opportunity only tell a small part of the story of the injustices faced by EJ communities. In light of the many challenges such persons face, lacking the opportunity to pursue something like a medical degree is fairly trivial. Even if we think of career opportunities more broadly, there is still a much wider range of non-career concerns that must be acknowledged, and addressing these is my next goal.

6. Rawls on Political Personhood: Environmental Injustice and Challenges to Agency

The previous chapter laid out the general picture of Rawls's "justice as fairness" and suggested that opportunities for career achievement can be severely limited by exposures to environmental hazards. However, my research suggests that the injustices faced by EJ communities are much more profound than simple violations of a part of the second principle of justice. Beyond limiting opportunities, the circumstances of life in such communities make full participation as a civic agent impossible. To show this, I focus on the social bases of self-respect, which Rawls considers the most important of the primary goods. Ultimately, what is troubling is that residents of EJ communities are de-agentialized, and either lose or fail to develop the full powers of citizenship because of the circumstance of their lives and communities. While there are obvious respects in which environmental injustices can challenge self-respect and the moral powers more broadly, the experiences of residents of EJ communities also tell us something important about the relationship between environment and self-respect, and thus full development of moral personhood, an aspect of human life on which Rawls does not focus.

The Two Moral Powers

Rawls envisions an idea of justice that diverse persons will endorse, and to achieve this, he offers a metaphysically undemanding "political" concept of personhood. This view isn't assumed to be exhaustive of personhood *simpliciter*, but describes the

sort of citizen who could participate fully in a Rawlsian political system.²⁰² This political personhood involves two “moral powers”, which he takes to be sufficient for his project. The first of these is reasonability, or the ability to understand, apply, and be motivated by the principles of political justice.²⁰³ Participants in a Rawlsian society must be willing and able to follow the rules or principles of justice that create the framework of the state within which they live, and to understand those principles as providing reason for, or motivating, action. To be fully reasonable, citizens must possess four qualities. First, they must be able to agree to propose, endorse, and abide by “fair terms of cooperation”. Second, they must be able to recognize that certain comprehensive doctrines are reasonable, but that the number of these doctrines will be constrained by accepted notions of what is reasonable.²⁰⁴ Third, reasonable persons wish to be, and wish to be recognized as, fully cooperating members of society. Finally, individual citizens must possess a “reasonable moral psychology”, defined not psychologically, but philosophically.²⁰⁵

²⁰² As a result, there is no suggestion that someone who doesn't meet the requirements is not a person, but it does seem reasonable to suggest that someone who fails to meet these requirements would be unable to play a role in the system Rawls envisages.

²⁰³ Rawls and Kelly, *Justice as Fairness : A Restatement*, 18-19.

²⁰⁴ Comprehensive doctrines are ideas of the good. Thus, the good is constrained by the right, and any idea of the good that would be disallowed by the principles of justice would not be allowed. For example, if a comprehensive doctrine prohibited certain persons or groups from possessing full political liberties, this might not be considered an acceptable rational perspective.

²⁰⁵ Rawls, *Political Liberalism*, 81-82.

“Reasonable moral psychology” involves: 1) a capacity for a sense of the good and a reasonable conception of justice, 2) a willingness to participate in maintaining a just order, 3) an ability to develop trust in other citizens who also do their part with regard to justice, 4) growing confidence in others as cooperative arrangements continue over time, and 5) growing faith in the basic institutions as confidence in others develops.” (———, *Political Liberalism*, 86.)

The second moral power is rationality, which is “the capacity to have, to revise, and to rationally pursue a conception of the good.”²⁰⁶ Such a conception involves ends that provide guidance for understanding what makes a human life valuable, and is frequently embedded in a “comprehensive view”, which is a religious, philosophical, or moral doctrine that provides orderings of value for persons.²⁰⁷ Citizens are thought rational insofar as they are able to adopt means to achieve their ends, select probable alternatives, prefer greater goods, and prioritize conflicting objectives.²⁰⁸ These criteria act as guides for practical rationality, but do not stand as a definition for rationality. This entails that no particular comprehensive view is required by the Rawlsian ideal, allowing for the existence of many different systems of value.²⁰⁹

In combination, the two moral powers show that citizens possess “the requisite capacities not only to engage in mutually beneficial social cooperation over a complete life, but also to be moved to honor its fair terms for their own sake”.²¹⁰ Reasonability applies to persons in the public sphere as it implies a publicly shared conception, while rationality does not, as it applies largely to the private sphere and decisions made

²⁰⁶ Rawls and Kelly, *Justice as Fairness : A Restatement*, 19.

²⁰⁷ Ibid.

²⁰⁸ Rawls, *Political Liberalism*, 83.

²⁰⁹ In general, comprehensive views must at least accord with Rawls’s principles of justice, described later, in order to participate fully in Rawls’s notion of civil society. Thus, it is certainly possible that there are certain comprehensive views that will not fit in with Rawls’s notion of justice. For example, a comprehensive view that entails refusing certain rights to certain groups of citizens based on contingent facts about those citizens (like gender, race, class, or ethnic background) would probably not be an acceptable formulation of the good. Thus, the lengths to which a society will be willing to tolerate differences of opinion will be determined by whether the particular groups are in agreement with the principles of justice.

²¹⁰ Rawls and Kelly, *Justice as Fairness : A Restatement*, 19.

regarding the course of individual lives.²¹¹ This makes Rawls's definition of person normative, as it sets a standard for what is required for political and civic participation.²¹²

In possessing the two moral powers, the Rawlsian citizen is both free and equal. She is equal because she has the same basic capacities required by everyone for full cooperation in the civic world. This world is explicitly political,²¹³ and political equality is based upon the ability to exercise the two moral powers.²¹⁴ She is free because her political identity is separable from her conception of the good, allowing her to participate in civil society regardless of her particular notion of the good, and because she can view herself as a valid source of claims on institutions.²¹⁵ Ultimately, freedom is based in the political self, but enables the "moral" self, which is guided by a personal notion of the good, to pursue its projects.

Rawls further stipulates that to exercise the moral powers, citizens must possess "the intellectual powers of judgment, thought, and inference".²¹⁶ Because citizens are presumed to be rational, they are also assumed to possess a "determinate conception of

²¹¹ Rawls, *Political Liberalism*, 53.

²¹² Importantly, Rawls does not take the reasonable to proceed from the rational, but takes the two to be equiprimordial.

²¹³ Distinct from particular communities that may exist within a democratic order that are defined by shared religious beliefs or other non-political values.

²¹⁴ Rawls and Kelly, *Justice as Fairness : A Restatement*, 20-22.

²¹⁵ *Ibid.*, 23-24.

Roughly, she believes herself to be someone who has the authority to ask for things from the state, and criticize its behavior.

²¹⁶ Rawls, *Political Liberalism*, 81.

the good interpreted in the light of a (reasonable) comprehensive view”.²¹⁷ Thus, rationality doesn't simply require possessing a comprehensive view, but using that view to form specific ends which one follows. Lastly, citizens must “have the requisite capacities and abilities to be normal and cooperating members of society over a complete life.”²¹⁸ These capacities are assumed to exist, given that persons possess the appropriate motivations for engaging with the state and performing social duties.

The moral powers can also tell us whether the schema of liberties is adequate for all citizens, as an adequate schema should allow for the “development and full exercise of the two powers of moral personality over a complete life.”²¹⁹ This is judged through what Rawls calls “the fundamental cases”. The first fundamental case relates to the power of reasonability, and the use of freedom of thought and the equal political liberties in looking at the basic institution and its social policies.²²⁰ Thus, we can test whether the citizens have developed and are capable of exercising the power of reasonability by judging whether they can understand, discuss, and debate the fairness and justice of the most basic components of that society. For example, if residents of community were given no opportunities to voice their opinions about a planned environmental hazard, such circumstances would fail this test. Persons in this community would not have full

²¹⁷ Ibid.

²¹⁸ Ibid., 81.

²¹⁹ Ibid., 293.

²²⁰ Rawls and Kelly, *Justice as Fairness : A Restatement*, 112-13.

access to the range of political liberties, because they lacked the opportunity to make claims about social policies that impact their own lives.

The second fundamental case focuses on the rational, and the usage of liberty of conscience and freedom of association in pursuit of a particular conception of the good.²²¹ The second fundamental case is used to judge whether citizens can exercise their rational faculties in creating and following plans of life consistent with their own idea of the good. In testing this, we should ask whether a society allows for the creation and pursuit of rational goals (allowed by the shared conception of justice), in particular those goals that are important to personal identity.²²² For example, a woman who lives in an EJ community and sets rearing a healthy child as one of her rational goals may be thwarted in her attempt to do so by environmental hazards. Exposures to runoff from a toxic waste dump, agricultural waste, pesticides, and diesel exhaust can potentially lead to repeated miscarriages or birth defects, making it impossible for her to bear a healthy child.²²³ Under such circumstances, it would seem that the power of rationality is constrained, as her ability to form and follow a permissible path of life is severely limited by the environmental exposures she and her family face.²²⁴

²²¹ Ibid., 113.

²²² Insofar as “who we are” is determined by what we value and the activities in which we choose to engage.

²²³ An example of such a place is Kettleman City, where miscarriages and birth defects, ranging from cleft palates to severe brain deformities, are common. Louis Sahagun, "Grieving Kettleman City Mothers Tackle Toxic Waste Dump: Each Had Miscarried or Given Birth to a Child with Birth Defects. Their Pain Gave Them the Strength to Fight for Justice," *Los Angeles Times*, April 1, 2010 2010.)

²²⁴ Where permissible means “allowed by the society’s shared conception of justice”.

The other basic liberties also relate to these two cases, insofar as they enable citizens to be free and equal. However, we can judge the relative value or importance of a particular liberty with reference to its role it plays in the two fundamental cases.²²⁵ Hence, those liberties that play a central role in judging the moral powers, like the political liberties required for exercising the power of reasonability, should be considered especially valuable.

In discussing the moral powers, Rawls makes what initially appears to be a strange claim given his view of political personhood. This comes in the form of the “Aristotelian Principle” toward the end of *A Theory of Justice*, which roughly states that people enjoy the exercise of their abilities, and that greater development of these capacities leads to even greater happiness.²²⁶ By achieving certain ends, persons display “human excellences” that are valued by others.²²⁷

These excellences are abilities that everyone should value, and thus are good regardless of one’s particular rational perspective. For this reason, excellences, like playing the piano or cooking well, benefit not only those who possess them, but others around them.²²⁸ This helps explain why certain things are viewed as “good” for human

²²⁵ Rawls, *Political Liberalism*, 332-33.

The usefulness of a basic liberty is determined by reference to a “central range of application”, which explains the usefulness and importance of that particular liberty.

²²⁶ ———, *A Theory of Justice*, 364.

²²⁷ *Ibid.*, 376.

Not every achieved end counts as an excellence, and certainly any end that is part of a non-permissible notion of the good wouldn’t count

²²⁸ *Ibid.*, 389.

In this respect, the excellences are like the social primary goods, as they are things that everyone is assumed to desire, independent of particular characteristics of their rational goals or ideas of the good.

beings, while others are disvalued.²²⁹ Thus, it is through developing capacities that persons achieve their own conception of the good, and achieve the respect of others. Because persons desire the esteem of others, they are more likely to set personal goals for that others will think worthy of pursuit.

This seems at odds with the claim that the Rawlsian person is merely a political agent capable of developing and exercising the powers of rationality and reasonability. While these two capacities create the normative standard for political participation, Rawls does not typically suggest that they are, by themselves, worthy of pursuit, or that persons desire to take up ends others will find laudable. Thus, it seems incongruous for him to suggest that some human capacities are more than instrumentally valuable.²³⁰

However, upon further examination, this principle's role in Rawls's larger framework becomes clearer. For Rawls, the Aristotelian Principle is a psychological fact about humans that provides the motivation for developing the moral powers, and for the taking up of specific ends. As a psychological principle, it states that more complex developments in human ability will be valued more highly, and that persons will seek to engage in activities that challenge their capacities.²³¹ Thus, it only suggests an explanation for why persons develop these characteristics, based in human sociability.

²²⁹ However, it seems that a life in which a person does not work to develop capacities is inferior to a life in which that person does, independent of which specific capacities are being developed.

²³⁰ Importantly, the discussion of the "Aristotelian Principle" takes place in *A Theory of Justice*, while the moral powers come to play a large role primarily in the later works.

²³¹ Rawls, *A Theory of Justice*, 375.

This principle plays an important role in understanding the social bases of self-respect, and I will return to it later.

Failures to Develop/Exercise the Moral Powers

Because reasonability and rationality are assumed to exist in the contractors in the Original Position, it might seem that these two powers are simply innate in individual citizens. However, their development and exercise require shares of primary goods, and can be impacted by the absence of appropriate shares of these goods. Failures to possess these powers are devastating for participation in social and civic life. To lack the capacities associated with the moral powers is, functionally, “social death”; to no longer be a citizen, a source of reasons others need to respect, a participant in the legal system.

There are experiences that can challenge the ability to develop the moral powers—I will focus here on rationality. One substance present in our representative community is heavy metal contamination in the air, groundwater, and soil. Exposure to such metals, particularly at early developmental stages, can result in cognitive deficiencies.²³² Research shows that even incremental increases in childhood lead exposure can result in reduction in IQ, and *in utero* exposures, especially those occurring around the 28th week of pregnancy, can result in drastically diminished cognitive abilities.²³³ As noted in the previous chapter, decreases in IQ may limit the range of life possibilities a person can achieve, as well as resulting in poor impulse control and

²³² While lead is the most well known culprit, mercury, arsenic, and cadmium and other heavy metals can have similar impacts.

²³³ Within a range of 5-35 μ /dL of air, an increase of 1 μ /dL lead has been linked to the loss of 2-4 IQ points. Even exposures of below 5 μ /dL have been found to result in deficits in IQ. (Liu, Goyer, and Waatkes, "Toxic Effects of Metals," 944.

behavioral problems. An individual with severe cognitive deficiencies may have difficulty achieving her particular notion of the good, possess significantly fewer options in formulating a notion of the good, or may simply be incapable of formulating one at all.²³⁴ Pursuing a particular end also requires understanding how to determine and follow through on the appropriate means for achieving that end, which can also be impacted by lead exposures. To be fully rational in Rawls's sense is to be capable of this kind of instrumental reasoning, and in doing so, to express value, something that which seems clearly limited in the lead exposure case.

Samuel Freeman argues that the moral powers are "essential to our being free self-governing agents who have a conception of our good and who can take responsibility for our actions and ends and participate in social life", enabling the exercise of practical reason within the social sphere.²³⁵ As they are integral to conceiving of oneself as free, rational, and responsible for choices, the goal of justice should be to ensure that all citizens can exercise the powers.²³⁶ The moral powers allow for full social cooperation, which is necessary for the Rawlsian conception of political society, legitimizing the institutional framework and enabling citizens to understand themselves as creators of

²³⁴ I want to avoid making the suggestion that the cognitively disabled not capable of forming a notion of the good, but it does seem clear that severe cognitive deficiencies can seriously curtail the set of options available for pursuit. While having a happy and fulfilling life is still an option, becoming an independent adult and living on one's own may be impossible for the severely disabled. Disabilities, both cognitive and physical, can also have a significant impact on earning potential, and thus result in a more limited range of rational projects.

²³⁵ Samuel Freeman, "Introduction," in *The Cambridge Companion to Rawls*, ed. Samuel Freeman (Cambridge: Cambridge University Press, 2003), 26. Practical reason is of special importance.

²³⁶ *Ibid.*, 8.

those institutions. Social cooperation, and thus the two moral powers, are necessary for viewing oneself as part of a society, and capable of making legitimate claims vis-a-vis both political institutions and other citizens. Without the moral powers, we cannot “take advantage of the rights, or comply with the duties, of democratic citizens.”²³⁷ In this way, the moral powers also make citizens responsible, for both themselves, as well as the political and social institutions of which they are a part.

The primary goods are engaged in supporting the capacities associated with the two moral powers, and a just distribution of primary goods is one that allows for the exercise of the moral powers. Given that Rawls allows for inequalities of distribution in primary goods, differences in development of the moral powers will obviously follow.²³⁸ However, while development of the moral powers admits of gradations, there is a minimal standard that all citizens must meet, requiring an adequate quantity of goods.²³⁹ For the purposes of the current work, I will bracket the discussion of the distribution of financial resources. While poverty plays an important role in the injustices experienced by EJ communities, it is not a characteristic peculiar to EJ communities, despite its tendency to exacerbate other challenges.

To advance my argument, I will focus on the distribution of one particular primary good, and its role in the development and exercise of the moral powers. In

²³⁷ Ibid., 34.

²³⁸ For examples, the difference principle allows for significant enough differences in wealth that persons might have different capacities to achieve their rational goals. However, even those who are worst-off should still be able to develop the capacity to set goals toward which they work.

²³⁹ Rawls and Kelly, *Justice as Fairness : A Restatement*, 170-71, 75.

essence, I will show that the injustices faced by EJ communities do more than simply limit opportunity for achieving career goals, but restrict the ability of persons to express themselves as citizens and participate fully as free and equal persons. What is deeply troubling about environmental injustices is not simply dirty air or environmental degradation, but the concatenation of factors that come together to leave those impacted with degraded status as citizens.²⁴⁰

The Social Bases of Self-Respect

Chief among Rawls's social primary goods are the class of entities he calls the social bases of self-respect. These are considered the most valuable of the primary goods, and in the later sections of *A Theory of Justice*, he even argues that contractors in the Original Position would choose his principles of justice based simply on a desire to ensure an equitable share of this good for themselves. As a primary good, the social bases of self-respect are implicated in the ability to properly develop and exercise the moral powers associated with citizenship, and thus an unfair distribution can challenge the exercise of agential power in one's life and community.

For Rawls, self-respect requires first that a person possesses a sense of her individual value and the value of her notion of the good, and second, confidence in her ability to meet the ends entailed by that view of the good.²⁴¹ Thus, self-respect involves

²⁴⁰ As the current project focuses on environmental harms and their distribution within the domestic context, it will be assumed that the cases described are taking place within the United States, and thus are failures of justice in a liberal democratic state.

²⁴¹ Rawls, *A Theory of Justice*, 386.

confidence in the value and choiceworthiness of one's life goals, as well as believing oneself capable of achieving them. In a sense, self-respect is a condition for recognizing one's own capacities as rational agent who is capable of pursuing chosen ends.

A person's sense of value requires the formulation of a rational plan that involves exercising her capacities, in keeping with the Aristotelian Principle. Thus, she must view herself as possessing a rational project that is worthy of pursuit, insofar as it advances the expression of the human excellences and allows her to exercise her abilities. Further, self-respect also requires that those around us express regard for our achievements. Those achievements that push persons to exercise their abilities are more likely to be appreciated by others, as they express excellences that everyone has reason to pursue.²⁴²

When a person believes that her goals are worthy of pursuit, because she has a rational plan of life that is endorsed by others, she is more likely to meet the second criterion for self-respect, involving confidence in her ability to meet specified ends. The recognition that others think her ends are worthy of pursuit (because they involve the development and exercise of abilities,) gives her "support against self-doubt" in the face of setbacks and challenges to the achievement of her goals.²⁴³ Thus, the conditions that make it possible for her to develop a sense of self-regard also give her the support required to meet the rational goals she has set for herself.

If these conditions are not fulfilled, and a person fails to see the value and worth of her endeavors, or fails to believe herself capable of meeting her goals, she runs the risk

²⁴² Ibid., 386-89.

²⁴³ Ibid., 387.

of sinking into “apathy and cynicism”,²⁴⁴ rendering her an ineffective agent. Her rational capacities are diminished, and she is prevented from whole-heartedly pursuing what she values.²⁴⁵

In thinking about distribution, Rawls thinks we can discuss only the social conditions that enable the development of self-respect, and not self-respect itself. For Rawls, societies must provide citizens with the tools and opportunities required to develop a sense of themselves as valued and valuable members. Thus, the “basis for self-respect in a just society is not then one’s income share but the publicly affirmed distribution of fundamental rights and liberties.”²⁴⁶ What is most important is the public affirmation of one’s status as a free and equal citizen, independent of the distribution of goods like wealth or political power.

As the name implies, the social bases of self-respect are plural. And, like they other primary goods, they are “all-purpose”, meaning that they are instrumentally valuable for achieving a wide range of potential goals. Fundamentally, an adequate share of the social bases of self-respect involves access to those equal rights and liberties distributed by Rawls’s first principle.²⁴⁷ Although these rights and liberties are

²⁴⁴ Ibid., 386.

²⁴⁵ Although Rawls focuses largely on the link between self-respect and the power of rationality, there does seem to be evidence to suggest that self-respect may also play a role in the moral power of reasonability. Thus, if a person does not think that she is worthy of respect, it seem difficult to imagine that she will view herself as a participant in the political process, or as someone who can make claims based in the fundamental principles of justice.

²⁴⁶ Rawls, *A Theory of Justice*, 477.

²⁴⁷ This makes the social bases of self-respect a rather peculiar primary good, as it is actually composed, in part, of other primary goods. Perhaps this offers a partial explanation for why Rawls thinks that contractors might make its distribution the focus of their deliberations.

themselves primary goods, their equal distribution is also a component in developing self-respect. Further, adherence to the Fair Equality of Opportunity Principle is necessary for ensuring each person's status as free and equal.²⁴⁸ Fair equality of opportunity guarantees the opportunity to develop abilities, and excellences that are equivalent to one's counterparts, and this expresses the value of individual personhood. Together, the first principle and the FEOP set a baseline for the possibility of self-respect.

However, these are not the only bases for self-respect, and Rawls suggests that the remainder will be allocated within the constraints of the Pareto Optimality expressed by the difference principle. While he is silent about what these other bases are, it seems uncontroversial that financial resources are one of them, as a share of financial resources will be necessary for a person to believe that she can achieve her particular idea of the good. Philippe van Parijs suggests that decent employment is likely an important component in developing self-respect, as poor employment conditions may challenge a person's ability to see her labor as productive and part of a desirable form of life.²⁴⁹ Thus, independent of financial compensation, certain forms of labor, or at least conditions of labor, are impermissible simply because they challenge the ability to develop self-respect.²⁵⁰

²⁴⁸ Samuel Freeman, *Rawls*, ed. Brian Leiter, Routledge Philosophers (London: Routledge, 2007), 91.

²⁴⁹ Philippe van Parijs, "Difference Principles," in *The Cambridge Companion to Rawls*, ed. Samuel Freeman (New York, NY: Cambridge University Press, 2003), 220.

²⁵⁰ This might provide the beginnings of an arguments against using things like "hazard pay" to compensate employees with especially dangerous jobs.

The importance of the social bases for self-respect makes institutional failures to provide them for all citizens particularly significant. For Norman Daniels, equal distribution of the social bases of self-respect involves “a basis for each to recognize and respond to others as *equal* citizens.”²⁵¹ While there may be some variation in the actual distribution of the social bases of self-respect (because of the inequalities allowed for by the difference principle), every person requires a share that is large enough for her to view herself as equal in terms of citizenship. Importantly, this reflects the centrality of the social bases of self-respect in the Rawlsian picture. Ultimately, citizens need to view that their individual goals and projects as worthy of pursuit. Failures in this realm subvert rational agency, ultimately resulting in a failure to both flourish personally and fully participate in society.

Environmental Challenges to Self-Respect

If, as I suggested in the previous chapter, living in an EJ community challenges Fair Equality of Opportunity, an adequate share of the social bases of self-respect is unavailable to the residents of these communities. Thus, residents of EJ communities fail to fully possess and exercise the moral powers. However, I believe that the experiences of persons living in EJ communities show that further considerations must be made in our discussion of the adequate distribution of the social bases of self-respect. While residents of EJ communities may not enjoy the benefits of the FEOP (and perhaps do not even

²⁵¹ Norman Daniels, "Rawls's Complex Egalitarianism," in *The Cambridge Companion to Rawls*, ed. Samuel Freeman (New York, NY: Cambridge University Press, 2003), 247.

have the protection of the equal distribution of the rights and liberties of citizenship),²⁵² they are further impacted by the distribution of hazards in their communities. I believe that even if residents of EJ communities do possess an adequate share of liberties and rights, and that the FEOP obtains for them, they still may not possess an adequate share of the social bases of self-respect required for seeing their individual projects as worthy of pursuit. This is explained by the fact that lacking important environmental protections may lead to feeling that one's projects aren't valued. While having the ability to participate in political culture and pursue careers is important for understanding oneself as standing on equal footing as other citizens, so too are other aspects of life. Of foremost concern for my current work is the condition of one's environment, and what this expresses about one's status as a citizen in relation to other citizens.

Living with numerous environmental hazards can make it difficult for residents of EJ communities to see their personal value mirrored in the eyes of the larger population. To illustrate this, I will return to the representative community from Chapter 4, and the challenges its residents confront. This community has faced numerous hazards, ranging from failures to clean up old manufacturing facilities to the increased traffic from newer developments. Each hazard may suggest a problem, but taken together, they indicate a lack of respect.

The presence of numerous hazards challenges self-respect for two reasons. First, each of these exposures is hazardous, and thus linked to a potential negative health outcome. Failures, whether on the part of agencies or corporations, to protect health are

²⁵² Because they are denied certain forms of political participation.

themselves a sign of the devaluing of individual projects. Health problems, even fairly minor ones, can impact a person's ability to achieve their career and personal goals, or at least her belief in her own ability. For example, if a person in the representative community developed cancer because of exposure to PCBs from the nearby waste facility, it would likely be very difficult for her to believe that her life and life projects were of significance to those authorized to make zoning regulations, or the persons responsible for the waste disposal.

Because of this, she might fail to see herself as capable of pursuing her goals, and would lose important agential capacities. In such a case there is a two-fold attack on her agency. She may lose certain agential capacities because of her cancer (perhaps it will limit her career or other opportunities), but recognition of the lack of concern shown for her health may impact her ability to even view herself as an agent and a source of values. The latter challenge to agency might result in a global inability to accomplish any personal or political goals, while the former will simply limit what she can achieve in practical terms.

Second, the facilities present in the representative community are largely undesirable, and their very presence in the community might be seen as an affront, independent of the negative health outcomes they may cause. Living next door to a waste facility and down the street from a lead acid battery lab, in a community with a terribly underfunded school system and few job opportunities, could make it difficult to view oneself as a person whose goals are worthy of pursuit. To be, as some activists have put it, "zoned for garbage" itself challenges the development of self-respect.

In such circumstances, it may seem that one's community is not worthy of the same environmental protections afforded other communities. This is especially true when residents of heavily impacted neighborhoods can travel to more affluent neighborhoods and see fewer environmental hazards. This is exacerbated when individuals or communities are given little agential control over what occurs in their neighborhoods, because they believe that there is little that they can do to influence the outcome of decisions that impact their lives. Interestingly, there is data suggesting that lacking control over one's life is itself linked to negative health outcomes.²⁵³ Typically, those with political and decision-making power choose not to site undesirable facilities near their homes and places of work, and increased social mobility brings with it a larger assortment of choices in housing, meaning that those with larger shares of social goods will choose not to live in environmentally unsafe locations.²⁵⁴

We might think that the real culprit in preventing the development of self-respect here is lack of access to political rights and liberties.²⁵⁵ However, I think that what is occurring indicates something greater than simply a failure to fully exercise the political

²⁵³ Marmot, "Social Causes of Social Inequalities in Health." I would conjecture that this is linked to stress, which has also been shown to have a significant impact on one's ability to fight off and recover from disease. It is also worth noting that feelings of hopelessness or lack of agency may also be linked to increases in substance abuse and other troubling social behavior.

²⁵⁴ In a particularly effective maneuver, representatives from the Community Center for Action and Environmental Justice measured levels of particulate matter in a heavily impacted community, and compared them with measurements they had taken outside both the county supervisor's office and home. This comparison serves as a useful reminder to both the supervisor and the community residents of the great void existing between impacted communities and those who are elected to represent their interests.

²⁵⁵ In a recent paper, Andrew Courtwright has argued that stigmatization itself can lead to negative health outcomes, and thus that failures of health can be directly linked to inadequate distributions in the social bases of self-respect. Courtwright, "Justice, Stigma, and the New Epidemiology of Health Disparities."

liberties. Even if a person can access the same political and career opportunities, if she believes that her rational agency isn't recognized because she lives in a dangerous or degraded environment, self-respect will likely still be undermined. Although Rawls does not speak much about the value of the environment, the place one lives appears to have significant impact on self-understanding and self-image. As I noted in Chapter 3, there may be a social stigma attached to living near a LULU, something that would seem only to be increased by the presence of multiple of such entities.

Both forms of affront to self-respect illustrate the impact that the conditions of a person's life can have on their understanding of their own value and the value of their projects. Exposures that lead to negative health outcomes may suggest to a person that her goals are not worthy of pursuit, while the simple location of such facilities express a lack of consideration for a person's equal standing as a citizen. Under both circumstances, the ability to fully develop and express the moral powers is challenged. It is difficult to overemphasize the importance of these for Rawls, and it is difficult to overemphasize the negative results that failures to develop them may entail.²⁵⁶

Ultimately, if lacking access to socially valuable career goals can make persons nihilistic and apathetic, so too can legitimate feelings of being "dumped on". While the bulk of my discussion thus far has centered on the important link between the social bases of self-respect and the moral power of rationality, considerations of reasonability should also be noted. Reasonability involves the capacity to understand and participate in political culture, and lacking self-respect can lead to apathy about one's own life projects,

²⁵⁶ Results like social death.

but also communal projects. Caring about things like political culture and civil society may seem pointless in the face of environmental challenges, and it may be difficult to motivate yourself to care about society when it seems that society doesn't care about you. Although Rawls takes neither the reasonable nor the rational as prior to the other, it is extremely difficult to imagine engaging in the project of justice when one isn't even motivated to participate in one's own projects.

Part of what is under investigation here is the distribution of "bads", as opposed to the distribution of goods. While failures to ensure that persons have access to all of the items required to achieve full status as citizens are important, our discussion of justice should also recognize the important toll that the presence of things that undermine self-respect can have. Like other resources, environmental hazards are socially distributed, and in no way fundamental characteristics of persons or communities. As with the other social bases of self-respect, their existence and distribution is intimately related to the development of civil society.

While the distribution of harms is not something with which the Rawlsian project is concerned, the fact the uneven distributions of such harms can yield challenges to the power of rationality suggests that they need to be considered in our evaluation. Thus, we might be better served by suggesting that a healthful, or at least not terribly polluted, environment is part of the social bases of self-respect. Given that there is good reason to believe that environmental factors can impact self-respect,²⁵⁷ we have good reason to

²⁵⁷ Even "The Cerrell Report" acknowledges the relation between LULUs and feelings of stigmatization!

think that must be taken seriously in our discussions of what is required for full development and exercise of the moral powers.

From this, we can begin to construct an argument for the value of living in a healthy and aesthetically pleasing area, and hence the importance of environment in the development of self-respect. If the mere presence of environmental hazards can impact a person's ability to fully exercise their rational capacities, we know environmental issues can impact human life in a deep way. Thus, we need to take seriously that justice may demand that we work to limit these effects. However, our concerns may go further than merely working against the overabundance of hazards in a particular community to focusing on environmental health as a necessary condition for developing the moral powers.

If we value the achievement of particular ends in others (as Rawls thinks we do, evidenced by the Aristotelian Principle), we should also value the circumstances or means that enable the achievement of those ends.²⁵⁸ As a condition for full development of the human excellences, the environment may play an important role, and should be protected to the degree that it can impact persons' capacities as (rational) agents.²⁵⁹

²⁵⁸ This point takes up both the Aristotelian concern with excellences, and the more Kantian view that willing the ends necessarily involves willing the means. As Kant writes "if I fully will the effect I also will the action requisite to it; for is one and the same thing to represent something as an effect possible by me in a certain way and to represent myself as acting in this way with respect to it". Here, Kant is suggesting that if we take up a particular end or goal, we necessarily also take up the means that will bring that goal about. (Immanuel Kant, *Groundwork of the Metaphysics of Morals*, ed. Karl Ameriks and Desmond M. Clark, trans. Mary Gregor, Cambridge Texts in the History of Philosophy (Cambridge: Cambridge University Press, 1997), 4:417.)

²⁵⁹ We might even attempt to take the argument further and suggest that there is a potential argument here for taking the environment itself as a non-instrumental good, based in the Aristotelian turn in part 3 of *A Theory of Justice*. Simon Hailwood has argued for a non-anthropocentric form of Rawlsian environmentalism, based in a parallel between the natural and the political. Alternatively, Mark Rowlands

Unfortunately, developing the full argument for valuing the environment is beyond the scope of my current project. Suffice to say, however, that environmental injustices, and the challenges to rational agency that they produce, give considerable support to the view that there is an important environmental component to the way that we understand our own value and the value of our individual projects.

Rawlsian Environmental Justice

My goal has been to diagnose injustice, and there is route via which the Rawlsian picture of justice can help us better understand how EJ communities fall short of the demands of justice. While I will leave the fuller description of what justice requires for later chapters, I can offer some tentative suggestions. Clearly, the distributional disparities in both opportunities and the social bases of self-respect must be addressed for all communities facing environmental injustices.

To address these concerns, systems will need to be in place to promulgate accurate and complete information about developments, industrial facilities, transit routes, waste facilities, and other LULUs. While most people are not experts in toxicology or urban planning, institutions intended to create a basis for self-respect must provide information and opportunities for citizens to express their concerns and

has suggested that a thicker veil of ignorance, behind which parties would not know their own species, will change deeply the way that contractors understand the role and value of the environment. Both focus on constructing non-instrumental arguments for the value of nature given a Rawlsian framework. While I think that there is certainly the potential for such an argument, I do not fully agree with either approach, though I will leave my own views on this topic for a later time. (Simon A. Hailwood, "Towards a Liberal Environment," *Journal of Applied Philosophy* 16, no. 3 (1999); Mark Rowlands, "Contractarianism and Animal Rights," *Journal of Applied Philosophy* 14, no. 3 (1997).)

participate in public discourse, giving them a legitimate voice and political power.²⁶⁰

Practically speaking, this requires more than simply public statements about the worth of the opportunities and values of those living in the most impacted communities, but mechanisms enabling meaningful participation in decisions about the future of those communities.

As part of fully developing the moral powers, citizens must view themselves as engaged in a collective project with other citizens. This capacity can be achieved in a number of ways, not the least of which is public recognition of one's status as a source of claims upon society. Thus, people should not believe that they will be targeted for harms, and must be able to view themselves as participants in the decision-making processes that affect the future of the places in which they live. Ultimately, playing an agential role in one's own life and society can help to engender the feeling that one has valuable contributions to make, and a central role in that society.

A more fair distribution of the social bases of self-respect should provide the sense that society sees one's goals as valuable and one's projects worth pursuing. Thus, it is a public recognition of individual views of the good, focusing on the key components of civic engagement whose development is required to pursue those goods.²⁶¹ Failures to

²⁶⁰ Currently, municipalities are required to offer public comment periods where citizens can openly present their concerns before the officials responsible for making these decisions. These sessions are often a mere formality, and I was recently told that a very high-ranking public official responsible for air quality in the state of California informed a group of community activists and representatives that decisions are typically made long before meetings are actually convened. What was shocking was perhaps not that this is the case, but that anyone would willingly admit that public comment periods truly are the farce many had feared they might be.

²⁶¹ I take it to be the case that we don't even need to show that the concerns of any of the parties are legitimate in such circumstances, as long as they link up to some value set created by a particular determinate view of the good that is in line with the values of a liberal democratic society.

provide adequate access to the social bases of self-respect are not only discriminatory, but give rise to a legitimate feeling on the part of the poorer community that their concerns and values are not taken seriously. Such experiences effectively shut down the capacity for full civic participation. To rectify such injustice requires policy decisions as well as institutional changes. I will return to this issue, and specify how this might operate, in a later chapter.

7. Amartya Sen: Justice as Comparison, Potential, and Achievement

To fully capture the experiences of residents EJ communities, I think it's important to explore other dimensions of the challenges they face. To this end I will introduce the work of Amartya Sen, who offers an alternative to the Rawlsian project's focus on institutional structures. While Rawls provides valuable tools for evaluating environmental injustice, his view is concerned largely with persons as agents, who possess the capacities associated with reasonability and rationality. Because of this, Rawls doesn't address well-being, which I think is important for understanding individual lives and ensuring more just circumstances. Sen's work addresses the question of what is required for human flourishing, thus providing effective evaluative tools for addressing the quality of life in broader terms. One goal of the EJ movement is to improve the lives of individuals in impacted areas,²⁶² and Sen's work can help to specify which injustices should be addressed and provide policy guidance for doing so.

In conceiving of justice, Sen rejects the pursuit of ideal justice fundamental to Rawls and other constructivists in favor of a more "imperfect" notion. In his recent book *The Idea of Justice*, he develops an approach to justice he calls "comparative", following in the steps of Adam Smith, Karl Marx, and Utilitarianism. The view begins by examining the world we inhabit, with its many limitations, and inquires how it can be

²⁶² This improvement can be seen in a fairly holistic sense, including not just health, but also educational and occupational opportunities that will allow for a fuller kind of flourishing.

made more just. One of the virtues of this approach is its flexibility for addressing injustices. Hence, the Senian picture offers a helpful companion to Rawls, using a different metric for understanding and articulating justice, as well as for guiding policy decisions to address injustices.

Sen's primary unit of analysis is the individual person (as opposed to just institutions), and this forms the basis for his discussions of justice in the broader spheres of community, state, and globe. Describing what individual lives are like allows for comparative judgments between lives, and these judgments provide tools necessary for thinking about the distribution of those goods relevant to the quality of a life. Sen's project is essentially distributive, but he argues that distributive concerns must take into consideration differences in goals and individual abilities to make use of goods in the pursuit of goals. These differences are grounded both in individual character and preference, as well as societal and cultural values, making them distinct to individuals, communities, and national structures.

Given these considerations, Sen focuses not on institutions,²⁶³ but begins with an analysis of what makes a human life good, and works backward to determine what changes can be made to the institutional structures in order to further human flourishing.²⁶⁴ Hence, the goal is not to locate principles for guiding perfect institutions, but to mend existing institutional problems and the challenges to justice they create.

²⁶³ Thus, Sen's view is not a procedural notion wherein justice is simply the proper working of just institutions.

²⁶⁴ For an interesting discussion of this approach, see: Martha Craven Nussbaum, *Frontiers of Justice: Disability, Nationality, Species Membership* (Cambridge: Harvard University Press, 2007).

As I will show, Sen analyzes lives in terms of what people have achieved and are capable of achieving. Such an analysis provides clear goals for policy, as it guides us to focus on very specific aspects of the lives of persons and communities, and provides a metric for evaluating the success of those policy decisions. Sen's ability to identify what is going on in individual lives is one of his view's greatest virtues.

Although Sen has been influential across many disciplines, he is by training and vocation an economist. The idea that we can make comparisons between persons or groups is an important idea he takes from economics, and one that Sen thinks is greatly lacking in philosophical discourse, where it is assumed that comparative judgments require an independent standard with which to compare states of affairs.²⁶⁵ One important implication of this is, as Bernard Williams says of Sen's work, "that it is better to be vaguely right than to be precisely wrong."²⁶⁶ While such a view of truth may not be attractive to many philosophers, it has an intuitive appeal for persons interested in improving individual lives. Instead of working to find a perfect theoretical model, the focus is to locate changes that can be made in the service of improving the circumstance of existence for particular persons. Given these concerns, Sen's "aim is to clarify how we

²⁶⁵ Reiko Gotoh and Paul Dumouchel suggest that this comparative view of justice is one of Sen's key contributions to the study of justice. Reiko Gotoh and Paul Dumouchel, "Introduction," in *Against Injustice*, ed. Reiko Gotoh and Paul Dumouchel (Cambridge: Cambridge University Press, 2009), 2.

²⁶⁶ Bernard Williams, "The Standard of Living: Interests and Capabilities," in *The Standard of Living*, ed. Geoffrey Hawthorn (Cambridge: Cambridge University Press, 1987), 94.

can proceed to address questions of enhancing justice and removing injustice, rather than to offer resolutions of questions about the nature of perfect justice.”²⁶⁷

Comparative judgments regarding justice and injustice are necessary, as they allow for determinations of relative need. They also enable identification and prioritization of the most unjust circumstances, while providing means for evaluating the efficacy of policies instituted to alleviate injustices.²⁶⁸ Sen has focused his career on the residents of developing nations living under particularly impoverished circumstances, with limited access to any of the resources required to sustain even a minimally decent life. While severe deprivation presents an especially troubling form of injustice, it provides a view of those most in need of humanitarian intervention, and a better understanding of the motivation behind Sen’s work.

However, Sen’s focus on the importance of comparative judgments should not deceive us into thinking that there is no “back-stop” to the Senian view. Ultimately, he does hold that although the project of justice requires making comparative judgments, a definition of what counts as an obvious injustice, independent of comparative analysis, is necessary. This ability to simply state that certain states of affairs are unjust seems important, and I will return to such “patent” injustices in the following chapter.

As an added motivation for his project, Sen argues that even a fully-articulated theory of ideal justice might not provide the necessary means for making the comparative

²⁶⁷ Amartya Sen, *The Idea of Justice* (Cambridge, Mass.: Belknap Press of Harvard University Press, 2009), xvii.

²⁶⁸ We need to be able to say whether or not circumstances have improved to judge whether or not the approach is working.

judgments required for practical and policy decisions.²⁶⁹ Sen likens ideas of perfect justice to judgments of aesthetic perfection. He posits that even if we knew the Mona Lisa to be the most perfect painting in the world, this would still not tell us which lesser painting, a Picasso or a Dali, were more beautiful.²⁷⁰ The existence of an ideal may not enable judgments between non-ideal examples in aesthetic cases, and likewise, an ideal of justice does not provide means for ranking departures from that ideal.²⁷¹ This inability to make comparative judgments is one of Sen's greatest concerns with the constructivist model, and is a partial motivation for his work, especially in its most recent incarnations.

Taken as a whole, Sen provides valuable analytical tools for understanding the challenges faced by EJ communities, while helping to structure responses to those injustices. In this chapter, I outline Sen's project, with a focus on both his critique of Rawls, as well as his positive proposals. In the following chapter, I offer an analysis of environmental injustices from a Senian perspective, focusing on concerns related to well-being.

²⁶⁹ Such concerns may be of particular force in those circumstances where institutions lack the resources to address all injustices or bring every individual or community up to the same standard. In such cases, prioritizations are necessary.

²⁷⁰ Sen, *The Idea of Justice*, 16.

²⁷¹ Such issues can be found at the local and state level, as well as at the international level. States need some rubric for making decisions about internal distributions of the determinants of well-being, and external distributions of aid and relief monies.

Sen's Critique of Rawls

While recognizing the value and influence of Rawls's work, Sen is a strong critic of both his methodology and conclusions. Sen's initial complaint against Rawls is that the Rawlsian picture concerns itself with "goods rather than with what goods do to human beings,"²⁷² thus neglecting what people can accomplish with the goods they possess. *A Theory of Justice* focuses on the inadequacies of utilitarian political philosophy, but Sen thinks Rawls goes too far in rejecting utilitarianism, by neglecting the importance of how individuals are actually faring. Ultimately, Sen argues that there is no reason to think that contractors in the original position would neglect the "joys and sufferings" of representative persons, and further, why such concerns should be viewed as morally unimportant.

Although using representative persons allows Rawls to capture distinctions like those between classes, Sen argues that it is neither nuanced nor flexible enough to address the multitudinous and important differences that actually exist between individuals. Sen views his project as "person-centered,"²⁷³ and thus capable of accomplishing a wider range of goals than Rawls's with regard to describing the conditions of human life. According to Sen, Rawls can only understand persons as representatives relative to an ideal, but not with reference to actual human experience of the world. For this reason, the Rawlsian view is incapable of understanding the world as

²⁷² Amartya Sen, "Equality of What?," in *The Tanner Lectures on Human Values* (Salt Lake City: University of Utah Press, 1980), 218-19.

²⁷³ _____, "Well-Being, Agency, and Freedom: The Dewey Lectures, 1984," *Journal of Philosophy* 82, no. 4 (1985): 195.

it exists and is presented for adjudication, and is thus unable to address many forms of deprivation or injustice. This is particularly true in cases where there exist dramatic differences in the ability to make use of primary goods, whether resulting from cultural factors and values, or differences linked to physical disabilities and chronic ailments.

The ability to make use of goods concerns the differences between persons that make them more or less capable of accomplishing specific goals. Among the aspects of a person that can affect this ability, Sen counts physical size, health status, age, gender, cognitive ability, and emotional health. Differences may also result from variations in values and ends, which may require different quantities and types of goods.²⁷⁴ While Rawls focuses on whether people are “well off”, Sen wants the focus to be “well-being”.²⁷⁵

Circumstance of what Rawls would consider “imperfect” justice constitute the starting point of Sen’s view, and he argues that failure to acknowledge particularly challenging circumstances will lead to the unfair treatment of less efficient users of primary goods.²⁷⁶ A clear example is given in the case of a physically disabled person who cannot utilize primary goods with the same efficiency as someone who is normally abled. Sen argues that, given Rawlsian principles, such a person will likely receive neither more nor less than fully able individuals, leaving disabled persons at a significant

²⁷⁴ For example, choosing to have children and raise a family requires a certain quantity of material wealth, as children require many of the same social and material goods as adults, but are unable to meet this needs by themselves.

²⁷⁵ Sen, "Well-Being, Agency, and Freedom: The Dewey Lectures, 1984," 195.

²⁷⁶ Amartya Sen, "The Standard of Living: Concepts and Critiques," in *The Standard of Living*, ed. Geoffrey Hawthorn (Cambridge: Cambridge University Press, 1987), 74.

disadvantage. For example, someone who relies on a wheelchair for movement requires greater financial resources to meet the basic needs of mobility than someone who possesses the full use of her legs. If both receive the same quantity of primary goods, a larger percentage of the disabled person's total bundle of goods will be used in ensuring her mobility, leaving less for meeting other needs and desires. Effectively, she is able to do less with the same quantity of goods than someone who can walk without aid. For Sen, it is uncontroversial that people shouldn't be placed at a significant disadvantage due to facts about themselves for which they were not responsible, and a system that doesn't acknowledge this fails meet the demands of justice.²⁷⁷

However, Sen's worry that we should not, like Rawls, reject utilitarianism *in toto* does not amount to a blanket endorsement of utilitarianism. Utilitarianism, like Rawlsianism, fails to take into account variations that impact a person's ability to convert primary goods into utility or happiness.²⁷⁸ Again, Sen utilizes the example of the disabled person to illustrate his point. Here, he asks that we imagine a disabled person who does not think herself worse off than normally abled people.²⁷⁹ Because she reports being

²⁷⁷ This part of Sen's argument may or may not be compelling to everyone, but does track an important distinction that Rawls makes between those characteristics of a person that are relevant and those that are irrelevant, as seen from a moral point of view. As discussed in Chapter 5, morally irrelevant characteristics are typically facts about a person for which they can be thought to take some responsibility, such as social status or place of birth.

²⁷⁸ Sen, "Equality of What?," 201-02.

Further, Utilitarianism often falls prey to aggregative considerations that don't take the status of individual persons seriously.

²⁷⁹ Because she is simply very jolly, or has religious beliefs involving a very pleasant afterlife to which she will eventually travel.

Further, there is a concern about "adaptive preferences". This idea suggests that people tend to limit their preferences based on the opportunities they have available to them. Thus, an impoverished person might adapt her views about what she takes as desirable to more closely match her circumstances and what she is

content with her health, the special needs she has by virtue of her disability will not be acknowledged, which Sen takes to be deeply problematic.²⁸⁰

In departing from a narrow concern with either goods (Rawls) or welfarism (Utilitarianism), Sen argues that we should focus on what he calls the standard of living or quality of life.²⁸¹ This concept is quite robust in the sense that it is intended to capture both what a person actually achieves, as well as what she is capable of achieving. To evaluate the “standard of living”, Sen introduces capabilities, which focus on what a person is capable of doing over the course of her life.²⁸² As I have noted, Sen begins his quest for justice with the world as it is, and not with an idealized view of what the world should or might be. As he suggests, the focus is not on “just institutions”, but “just societies”, where the latter considers both the behaviors and social consequences of institutions.²⁸³ To illustrate how this operates, I will first consider the key components of Sen’s “capabilities view”.

realistically able to achieve. (Martha Craven Nussbaum, *Creating Capabilities: The Human Development Approach* (Cambridge: The Belknap Press of Harvard University Press, 2011), 81-84.

²⁸⁰ Sen, "Equality of What?," 218-19.

²⁸¹ This is a measure focusing only on considerations “that come from the nature of his *own* life.” Thus, while one might feel great pain in seeing the environmental dangers to which other human beings are exposed, this does not have one’s own life as its source. (Amartya Sen, "Capability and Well-Being," in *The Quality of Life*, ed. Martha Nussbaum and Amartya Sen (Oxford: Clarendon Press, 1993), 31.)

²⁸² While this focus on the relationships between goods and well-being may be a significant source of disagreement between Sen and Rawls, Sen has suggested in his recent work that it might not be damning for Rawls’s theory, as there is potential to account for such concerns without disposing of the view as a whole. However, Sen does think that there are important aspects of justice that the Rawlsian view is simply ill-equipped to address. Primary for Sen is Rawls’s focus on the nature of perfectly just institutions in the absence of a discussion about “actual behavior”.

²⁸³ Sen, *The Idea of Justice*, 67.

The Capabilities Approach

Sen's insistence that describing the quality of a human life involves examining both potential and actual achievement is one of the hallmarks of his view. In general, Sen views achievement simply as doing or being something, like being literate, possessing good health, or becoming a parent and raising a child. However, neglecting the importance of potential achievement, understood as opportunity, leaves out the important component of freedom.²⁸⁴ First, I will address achievement, which Sen describes with the term "functioning", and then "capabilities", which are intended to capture the ability or potential to achieve, and are a measure of freedom.

Functionings

Functionings serve as the most basic component of Sen's view. A functioning marks something a person has actually achieved, or "parts of the state of a person—in particular the various things he or she manages to do or be in leading a life".²⁸⁵ While the notion of achievement colloquially suggests having met an important or challenging life goal, Sen uses it more broadly. The goals he includes vary from simple things like having adequate nourishment to extremely complex functionings such as being adequately social

²⁸⁴ While there is a strong current of Aristotelianism in the Capabilities approach, this is a place where Sen departs from that view, by rejecting the great importance of teleology. While Aristotle focuses on ends, and thinks "the best good is apparently something complete" (Aristotle, *Nicomachean Ethics*, trans. Terence Irwin, 2 ed. (Indianapolis/Cambridge: Hackett Publishing, Inc., 1999), 1097a27.) Sen argues that completion is not the measure of goodness, particularly with regard to quality of life.

²⁸⁵ In Sen's thinking, achievements are objectives that an individual can meet. Thus, the term does not necessarily carry with it any moral or social significance, and doesn't imply that what is achieved be impressive nor valued by everyone equally.

integrated or meeting individual career or relationship goals.²⁸⁶ Such functionings are not commodities, nor are they reducible to the utility functions individuals receive from commodities. They are, as Sen notes, states of persons, expressing what a person does or is at a particular moment in time. The number and types of achieved functionings valued in a society may vary greatly with the society's development and values.²⁸⁷ Individual persons may also "differ a good deal from each other in the weights they attach to these different functionings—valuable though they may all be—and the assessment of individual and social advantages must be alive to these variations."²⁸⁸ For this reason, two people who live in the same social or cultural context may deeply disagree regarding the relative values of functionings.²⁸⁹

The weight accorded to a given functioning expresses a value, which in turn affects decision-making. For example, while two people value education, they may value it to different degrees. If Shah simply wants to achieve a degree that will make him competitive on the job market, while Judy is committed to pursuing graduate level study and becoming multi-lingual, Shah will only be slightly disappointed with rejection from his first choice university, while Judy might find this devastating. Thus, Judy will make

²⁸⁶ Sen, "Capability and Well-Being," 31.

²⁸⁷ For example, while literacy might be a fairly "minor" achievement for someone who grew up in a fairly affluent society with college-educated parents and high overall literacy, it might be quite an accomplishment for an individual living in a developing nation with limited access to educational resources.

²⁸⁸ Sen, "Capability and Well-Being," 31.

²⁸⁹ For example, while we both might require nutritious food to survive, I might spend a great deal of time preparing healthful and creative meals, while another person survives on microwave burritos. Both approaches meet the same general goal, but express different systems of valuation and preference.

choices in an effort to further her educational goals, by enrolling in extracurricular activities and carefully preparing for important examinations.

Some functionings require the same commodities cross-culturally, while others depend greatly on particular facts about societies. For example, being well-nourished isn't heavily affected by a person's context, as the human body, despite variations in size, metabolism, and activity level, requires a stable caloric intake to function.²⁹⁰ On the other hand, participating in public life may be valued cross-culturally, but achieving it will vary with the opulence of a society and its particular values.²⁹¹

Some functionings are "more basic" than others, insofar as they are shared widely, both individually and cross-culturally, and because they play a pivotal role in human life. Achievement of basic functionings creates the minimal standard for a good human life, which I will return to in the next chapter. Sen considers health to be such a functioning, and because possessing or failing to possess good health plays such a large role in discussions of EJ communities, I will use it to illustrate Sen's view of functioning, particularly basic functioning.²⁹²

²⁹⁰ There are, of course, variations in the way people attain nourishment, but if the focus is caloric intake, there is little variation in what persons actually need.

²⁹¹ Sen, "The Standard of Living: Concepts and Critiques," 18.

²⁹² Good health can be understood as something like "minimally decent health". The question of what actually constitutes "good health" is important for our overall discussion of environmental justice (in addition to being a difficult notion to pin down, it will also vary between individuals and cross-culturally), but I will not address it fully at this point. For discussing Sen, I am relying on a very intuitive conception that basically defines good health as being free from preventable disease and obvious harm. This will not be adequate for the ultimate picture I will offer, but should be sufficient to give a general picture of Sen's view of justice.

While the definition of good health may vary cross-culturally, health seems to be highly valued by a wide range of persons and groups. Being “in good health” can mean a lot of things, but is something that people value. If someone is unable to achieve a certain standard of health because of exposure to environmental hazards (particulate matter in the air that causes asthma, lead exposures leading to reduced cognitive development, *in utero* exposures to estrogenic compounds resulting in reproductive difficulties), this seems clearly troubling. What concerns us is not what failure to achieve good health does for individual lives and prospects, but the fact that failing is itself a problem.²⁹³ This marks an important departure from Rawls, as Sen views achieving good health as itself important, independent of its instrumental value.

To illustrate the appeal of this point, we should think about what happens when a person fails to achieve good health. When someone is diagnosed with an especially persistent or even terminal form of cancer, we do not find it regrettable because it prevents her from achieving certain personal and social goals, but because cancer itself is a bad. Cancer is itself a bad, in large part because it is a failure to achieve good health, and brings with it suffering. We might also recognize that her cancer, and the subsequent chemotherapy it requires, will subvert her efforts to complete her education or advance in her career, but these concerns simply follow from the initial intuition that she has suffered a terrific loss.

²⁹³ While the Rawlsian understands health merely as possessing instrumental value for the development of the moral powers, the Senian view takes health itself to be valuable independent of what one can “do” with it. For this reason, Sen clearly has a more fully-developed view of human flourishing, including a much wider range of human concerns than those associated with the powers of citizenship.

However, we needn't discuss such a radical departure from good health to see that this is the case. Although trite, the common statement that, even under challenging circumstances, "at least you have your health", points to the role that good health plays in our self-understanding. Good health, whether understood as the absence of severe disease or disability, or in the more robust sense of possessing certain attributes, is a measure of the kind of life one leads. Achieving good health is thus part of the package of things required for conceiving of one's life as a good one, an important idea that I will unpack later on. For Sen, to be in good health is to achieve the functioning of good health; to "be healthy". However, achievement is only part of the picture, and we must extend our analysis to encompass freedom, expressed in his view as "capability".

Capability Sets

For Sen, freedom is key for understanding the operation of choice, and how persons express preferences and values. By addressing and evaluating freedom in its different aspects, Sen provides an analytical framework for describing why limitations on freedom are troubling, and when these limitations might constitute injustices. In his recent work, Sen even refers to his view as the "freedom-based capability approach", highlighting the intimate link between freedom and evaluating the quality of life.

Sen conceptualizes freedom through "capabilities", which reflect the "alternative combinations of functionings the person can achieve".²⁹⁴ If we imagine all of the functionings (sometimes called "functioning vectors") a person can achieve (good health,

²⁹⁴ Sen, "Capability and Well-Being," 31.

a fulfilling career, parenthood, a fulfilling social life, etc...),²⁹⁵ capability sets are the various permutations of those functionings. Thus, capability sets describe opportunity or potential, but not actual, achievement, and it is through evaluating the capability sets available to a person that we make determinations about freedom. A person's capability sets will be determined by a combination of factors about her individual status (things like age, wealth, and gender), and the society in which she lives. Even if one does not exercise a capability, having the potential to exercise it indicates freedom, which should be valued.

To understand capabilities, we should examine the various opportunities from among which we choose in our lives. Each capability set includes an extensive number of functionings, and the whole set of capability sets contains all the permutations of these functionings. To simplify, imagine that you have capability sets that includes the following categories of functionings: a career, a residence, and a vehicle. For each of these categories, there will be 5 possible functionings.²⁹⁶ The combination of the categories of functionings will yield 125 different capability sets.²⁹⁷ Although this is a much simplified, it helps to illustrate how these sets work, and why we might desire to have greater opportunities. Every added opportunity (whether the opening of a new career path or a whole new category of functionings) increases the possibilities available

²⁹⁵Capabilities are themselves sets, and the set of all capability sets available to an individual may contain sets that are permutations of many different possible functionings. In this sense they are "potential" and not "actual" achievements. (Ibid., 31)

²⁹⁶ For career: doctor, teacher, busdriver, CPA, and farm laborer. For residence: apartment, condo, detached house, duplex, and living with parents. For vehicle: car, bicycle, minivan, scooter, and segue.

²⁹⁷ Eg.,[doctor, condo, scooter], [busdriver, duplex, minivan], [CPA, detached house, sedan]

to a person. Thus, if we were to add one more functioning vector to each category, we would have 216 capability sets from which to choose.

Even though achieved functionings are important, capability sets are the site of policy focus. This is largely because governments cannot determine what people will actually choose, but should try to ensure that the choices they have are worthy of choice while allowing persons to express their individual values. This brings us to the role of freedom.

Freedom

While functionings are more basic, it is from among groups of capability sets that individuals will ultimately choose, and thus particular functionings cannot, by themselves, be markers of the quality of individual lives.²⁹⁸ We value choice, and for Sen, the ability to choose between capability sets shouldn't be seen as secondary to the option chosen. To illustrate, imagine two scenarios, one in which I am presented with 10 different flavors of ice cream, and one in which my only option is chocolate. Given my preferences, both scenarios would likely yield the same result, and I would shortly be found enjoying chocolate ice cream. For Sen, the opportunity to choose is valuable, regardless of the outcome. Thus, even though the outcome is the same, the 1st scenario would be more desirable, as I freely choose chocolate. Additionally, freedom, for Sen, requires that the options in the choice set be desirable, or at least choiceworthy. Thus, we value the freedom to choose from among a set of ice creams flavored chocolate, vanilla,

²⁹⁸ While Sen concedes that the value of a particular capability set might be reducible to the value of a particular achieved functioning, which he calls "elementary evaluation", this cannot account for the important role that freedom to make a choice from among a particular set of capabilities plays. (Sen, "Capability and Well-Being," 38-39.)

strawberry, rocky road, etc... while a scenario in which the non-chocolate flavors were plywood and PVC would be inherently undesirable. Choices made from among a set of potentially desirable options are free, while no freedom is expressed in choosing from among a set of options when most, or all, are unappealing.²⁹⁹

Analogously, we might think of circumstances like those faced by persons in EJ communities, where the choice is between potentially negative health outcomes and the hope of achieving (often minimal) financial gains. For example, as discussed in chapter 2, residents of economically depressed areas might be willing to allow harmful industrial facilities into their neighborhoods in the hope of job creation or increases to the tax base. Because the options are (1) maintaining an impoverished status quo, and (2) making environmental and health sacrifices in order to achieve financial gain, such choices are not free in the Senian sense. Neither option is appealing, as both poverty and ill health are widely disvalued.³⁰⁰

To further understand freedom we must discuss control, in the sense of possessing the power to engage in, and act on, choice. To illustrate, Sen asks us to imagine someone who, has decided to spend a free day at home, reading and relaxing. In the first scenario

²⁹⁹ Ibid., 34-35.

Evaluation of sets of functionings draws us into the rather complex domain of set theory, and Sen repeatedly makes use of set theoretical notions in his work. I will not be addressing this in any detail. I do not believe myself adequately competent to work with set theoretic notions in a facile way, and I believe that comparative judgments between capability sets and functionings can still be made with reference to broader claims about individual preferences and social/cultural values without them. This is not to deny the importance of this work, but to suggest that I would rather rely on intuitive understandings of what is better and worse in my discussion, particularly because I hope to create a work that retains a meaningful and important link to the lived experiences of individuals.

³⁰⁰ This is an especially problematic example, given that communities may not see benefits from industrialization and other development at the level they had anticipated.

he chooses to do this, and succeeds in fulfilling his goal. In a second scenario, we imagine that this same person were taken from his home and forced to engage in some other activity. Here, he no longer exerts control over his life, and is, in important respects, not freely choosing. In the third case, we imagine that the same person were physically prevented from leaving his home, and thus forced to do the very thing he'd have chosen.³⁰¹ While our reactions to the second case are negative because the person is coerced into doing something he finds undesirable, the third case requires some unpacking.

If someone does the very thing he would have chosen even if given other options, is the act unfree? Is there a significant difference between the first and third cases? Here, we seek to explain the intuition expressed in the ice cream example.³⁰² For Sen, the important difference between the cases is control. Controlling the way the outcome is achieved is always valued, independent of the outcome.³⁰³

³⁰¹ Sen, *The Idea of Justice*, 229.

It is important to note that what is at discussion here is merely the issue of freedom and control. We are not imagining that the people who hold this man under their control are causing him any physical danger. Whether or not there is something psychologically harmful about the stated of affairs where one is provided with no choice is a different question. We might imagine that the individual in question is someone who, simply put, doesn't like being "told what to do". In such a case, loss of freedom might take a backseat to concerns of external interference.

³⁰² I don't think that this issue can be reduced to the same issues at stake in discussions of freewill. While the literature on free will focuses on the metaphysical question of whether persons can be seen as responsible agents who are the source of actions, the issue at stake here is whether the sets of choices available to persons provide them a "real" opportunity to express preference and value. What Sen and many other political thinkers are concerned with is whether persons have the requisite freedom, within a political society, to work toward and complete specific projects or achieve personal goals (whether associated with well-being or other concerns).

³⁰³ Attached to this concern is a worry regarding the role coercion plays in cases like these. It seems important that we get clear about whether what is problematic in the third case is that the individual is being forced to do something, or that he isn't being give a choice. To address concern, I will modify the case slightly. Imagine that the individual in question is disabled, and thus requires a wheelchair to move

The distinction between freedom's opportunity and process aspects will be helpful at this point. Sen claims that "more freedom gives more *opportunity* to pursue our objectives—those things that we value" regardless of how those objectives are met. On the other hand, the process aspect of freedom points to the control a particular individual exerts over both the choice of objectives and means adopted to achieve those objectives.³⁰⁴ Increasing freedom's opportunity aspect allows for greater chances to express values through choosing goals, while increasing its process aspect provides greater chances to determine how one works toward these goals.

If we return to the case described previously, what distinguishes the first scenario, where the man chooses to stay home, from the third, in which he is forced to stay home, is that freedom's process aspect is severely limited in the third case, although its opportunity aspect varies little. While the endpoint is exactly the same (he spends the day at home), the process is unfree in case three. He does not control the means through which he achieves this goal, and thus his freedom is limited. Freedom's process aspect, and our discomfort in its violation, provide at least a partial explanation for the value we place on free choice and the exercise of control over our lives.

In the context of an EJ community, we might imagine a person who desires that a waste disposal facility not be sited in her neighborhood. Even if construction of the

about the world. Under the first circumstance, we will imagine that she chooses to spend a free day at home reading. In the second scenario, she spends the day at home, but could not have gone out anyway because the braking system on her wheelchair is malfunctioning and she cannot physically leave the house. While this is not a case of outright coercion like the one previously described, her freedom is certainly limited in a significant sense, and she lacks control over her options as she lacks the means to do otherwise. What such a case shows is that we can find a lack of freedom or control morally objectionable without the existence of outright coercion.

³⁰⁴ Sen, *The Idea of Justice*, 228.

facility were halted, or never began, whether she had the opportunity to play a role in this decision is important. Thus, if the facility is proposed, but the process of decision-making is totally opaque to her, and she is given no chance to participate, freedom's process aspect would not be fulfilled, and she would not be expressing freedom in the sense important to Sen.

This also explains why the range of choices must include multiple appealing options for choice to be considered free. If someone is presented with only a single viable option and a number of objectionable ones, the opportunity aspect of freedom is violated insofar as her deliberation in choosing a course of action is restricted. If we return the person who is faced with the choice between poverty and allowing an additional source of pollution into their neighborhood, we can see the opportunity concern illustrated quite clearly. A person who is forced to choose between fulfilling one (good health) or another (financial stability, implicated in access to adequate nutrition and social participation) does not have a fully free choice, because neither option is particularly appealing

Evaluating Lives

In describing the relationship between achievement and freedom, Sen provides categories that allow evaluation of overall quality of life along four dimensions, using many of the ideas I have already discussed. These dimensions are intended to capture the full range of things that make a life good. Success along one dimension does not necessarily entail success in all, and it takes the whole picture of achievements and capabilities to judge the quality of a person's life.

Sen begins by distinguishing well-being goals from agency goals. By goals, he simply describing ends or things a person could hope to achieve. Well-being goals relate to individual welfare, which is not merely utility or happiness, but anything relevant to the pursuit of well-being. This includes goals like adequate nutrition, social integration, and anything relevant to general human flourishing.³⁰⁵ Agency captures what a person regards as important, and thus tracks individual values.³⁰⁶ While well-being goals are, in a sense, objective, as they are likely to be valued intersubjectively, agency goals express subjective values, which may be shared, but are important only because they are expressed by a particular person.

The second distinction Sen draws is between achievement and freedom of achievement, where the first is actual achievement of a goal (functioning), and the second is the capacity to achieve (capability).³⁰⁷ This distinction is related to what a person takes up as important and personally valuable. Together, these create the four “different concepts of advantage, related to a person: (1) ‘well-being achievement’, (2) ‘agency achievement’, (3) ‘well-being freedom’, and (4) ‘agency freedom’.”³⁰⁸ These categories provide the tools for understanding how persons are doing. While achievement refers only to the chosen capability set, freedom encompasses all possible sets, including the

³⁰⁵ Sen’s view on this will be more clearly elaborated in the next chapter when I focus on the basic functionings, but human flourishing, for Sen, also includes things like free choice and access to a variety of opportunities in life.

³⁰⁶ Sen, "Well-Being, Agency, and Freedom: The Dewey Lectures, 1984," 203-04.

³⁰⁷ Including the ability to choose a certain goal and not to some alternative goal(s). ———, "Capability and Well-Being," 35.

³⁰⁸ *Ibid.*

one ultimately chosen, making choice an important component of every category.

Freedom, as it is described here, also requires that the capability sets from which one chooses are actually choiceworthy. It is not merely that there are different capability sets available, but that these capability sets must actually offer opportunities that would be understood as worthy of pursuit.

While advancing well-being is important, there are circumstances where agency goals are more valued, even when agency pursuits are at odds with well-being, or when pursuing one may limit pursuit of the other.³⁰⁹ Sen uses as his example Gandhi, whose agency goals (the creation of an independent Indian state,) came at great personal expense, and likely negatively impacted aspects of his well-being during the course of his non-violent protests against British colonial power.³¹⁰ In such cases, agency concerns outweigh those of well-being in a person's scheme of valuation, indicating that agency concerns should not be viewed as secondary to considerations of welfare.³¹¹ Thus, Sen wishes to avoid placing too much value on the importance of well-being to the detriment of the powers of agency.

³⁰⁹ ———, *The Idea of Justice*, 288-89.

Sen does recognize that a person's agency goals are likely to include promotion of well-being, and increases in well-being will be linked to increases in agency achievement. Conversely, failures to achieve agency goals can frustrate well-being. (———, *The Idea of Justice*, 287.) This suggests that there is significant interplay between agency and well-being achievement, but not that the two are coextensive.

³¹⁰ Sen, *The Idea of Justice*, 289-90. The kinds of challenges to well-being imagined here are those related to hunger strikes, imprisonment, and other forms of non-violent protest.

³¹¹ While I find Sen's framework useful, I am slightly skeptical of whether some of these distinctions are as hard and fast as he makes them. However, this is not the place for a sustained critique of Sen's project, and I will leave such discussions for another place.

Taken as a group, these four conceptual categories allow us to talk about the quality of a human life. By creating a full picture of what a life looks like, we can make comparative judgments between persons. For example, if we were to compare well-being freedom for two different persons, we would list each person's sets of capabilities related to well-being. One person lives in an affluent suburban area possesses capability sets with a wide range of potential functionings related to well-being, because of her socio-economic status. Thus, she has a wide range of capability sets that include good health (as she has access to the determinants of health, like medical care, healthy food, a healthy environment), the respect of her community, and other functionings associated with well-being. On the other hand, the second woman lives in a poor inner-city neighborhood, and many of the functionings associated with well-being are simply out of her reach. Due to poverty and social marginalization, her opportunities are simply much more limited.

Because she has so many more opportunities available to her, and she has the ability to choose from among these apparently choiceworthy options, we will say that the wealthier woman is more successful, in terms of well-being freedom, than her poorer counterpart. Note here that questions of personal or cultural preference play only a very limited role, as the main focus is on the variety of opportunities available, and not the choice one actually made.³¹² Measuring well-being achievement allows for a discussion of choice. Depending on their choices, it is possible that both women might end up with the exact same sets of well-being achievements.³¹³ In such a case, it would still be true

³¹² However, the choiceworthiness of the components of a capability set might be impacted by individual or social values.

³¹³ Assuming that there is sufficient overlap in capability sets.

that the wealthier woman is “better off” on the whole, as she has greater well-being freedom, and more opportunities to decide what she will achieve with her life.

Such comparative judgments serve the dual role of allowing us to determine who is better and who is worse off, while providing specific guidance regarding the specific capabilities we should work to ensure persons have to the opportunity to choose from. Thus, if certain key functionings are absent from the capability sets available to the less wealthy woman, we know that these will need to be provided to her if we are to adequately respond to the demands of justice. While I have sketched Sen’s comparative project of justice in this chapter, I have yet to discuss the important role that judgments of “patent injustice” play in his project. For Sen, such injustices involve failures of inabilities to achieve certain “basic” functionings. These basic functionings, and a more sustained Senian analysis of environmental justice, are the topic of my next chapter.

8. Environmental Injustice, Capabilities, and Challenges to Well-Being

Given this understanding of Sen's broader theory, my next step is to discuss the specific experiences of EJ communities, through the lens of his work. As Sen begins by considering what is possible for people to do and be, the analysis of environmental injustices must also start there. For communities like our representative community, where multi-layered, generational impacts are exacerbated by other challenges, opportunities, understood as capabilities, will clearly be limited. One important aspect of Sen's philosophy is that, because he is largely concerned with improving the lives of those under the most difficult circumstances, his work may be more helpful for discussing how to ameliorate injustices than it is for identifying specific injustices or making determinations of justice based in some ideal. However, there are some important contributions his work can make in our diagnosis of environmental injustices, in particular with regard to well-being.

The analysis should begin with Sen's most basic component, functionings, and whether the persons whose lives we are examining have achieved, or are capable of achieving, those functionings required to meet the minimal standard of human existence. Failure to achieve the basic functionings, which I outline below, should be a cause for concern, and if the capability sets available to a person do not include the basic functionings, there is a clear injustice. At the same time, we can compare one person's achievements and opportunities to another's. What is desirable is not merely minor departure from the minimal standard, but capability sets that allow persons to do and be a

wide range of things, thereby offering them freedom to make choices and through these choices, to express values.

For Sen, the relevant categories in evaluating the quality of a life are well-being, agency, freedom, and achievement. I will look most closely at well-being in its two forms, although agency will be discussed briefly at the close of this chapter. This decision is largely a practical one, as I think much of the concern regarding how agency goals are impacted by environmental injustices was nicely captured in previous chapters. Additionally, it is specifically in the realm of concern for well-being that Sen views himself as distinct from Rawls, and I will take him at his word.

The Basic Functionings

The final component of Sen's capabilities view is the basic standard to which I have already alluded. This provides a means for determining when a life fails to meet a minimal standard, sometimes described as a "patent injustice".³¹⁴ The prevention of such injustice should be the focus of policy decisions, and is the primary goal of those engaged in projects of justice.

The standard for determining what constitutes a patent injustice presents a departure from Sen's comparative picture. This standard isn't arrived at by creating a complete ranking of all potential comparisons and determining which persons are the worst off, but by looking at widely shared values. We can locate the standard by

³¹⁴ This is the language that Gotoh and Dumouchel use in their presentation of the Senian project, and I think it offers a nice way of describing the difference between a simple injustice and a comparative injustice.

examining the functionings that are shared by many persons and cultures, and given the greatest value by persons and cultures. The most basic functionings and capabilities are those involved in the fulfillment of “certain crucially important functionings up to certain minimally adequate levels.”³¹⁵ These basic or crucial functionings include things like access to food, water, shelter, socially acceptable clothing,³¹⁶ good health, and other widely shared goods. In order to determine whether a particular achievement fits into this category, we must engage in empirical research, and find out if that achievement is one that many different cultures value very highly. If we find that persons in a variety of cultures, consider failure to achieve this particular functioning to be an indication of a degraded or undesirable existence, this tells us that it is a basic part of what they take to be a good human life.

The goal of justice should be, in part, ensuring that all persons have the opportunity to achieve basic functionings (have access to capability sets that include the basic functionings). There is some imprecision in Sen’s definition, resulting from the fact that we cannot know what is basic antecedent to an investigation of the values people and cultures express. Sen’s idea of what it means to be a human being is, in a sense, limited to the capacity to possess agency and well-being goals. However, these basic functionings are neither necessary nor sufficient conditions for calling something human, but simply tell us that humans possess certain capacities and shared needs, though they are not defined by them.

³¹⁵ Sen, "Capability and Well-Being," 41.

³¹⁶ Importantly, Sen agrees with Adam Smith that the trappings required for appearing in public without shame are necessary for living a good human life.

The set of functionings that are widely and highly valued in a culture constitutes the minimal standard, and lives are evaluated based on whether they meet this standard. Even when functionings are valued cross-culturally, the way that they are met shows significant variation. For example, we find great variation in what counts as socially acceptable clothing, ranging from cultures where people are expected to own large and varied wardrobes to cultures where garb is determined largely by religious custom. The particular form that this garb will take also shows significant variation, even within subcultures. Thus, the fact that something has been identified as a basic functioning does not fully describe what is required to achieve that particular functioning.

Focusing on basic functionings and capabilities provides an alternative to the financially-centered “poverty line” that is largely the center of most discussions of deprivation. As Sen suggests, “successes and failures in the standard of living are matters of living conditions, and not of the gross picture of relative opulence” captured when the focus is solely on the distribution of goods and commodities.³¹⁷ To illustrate this view, we can look to cases where states need to determine whether third party humanitarian intervention is appropriate or necessary. Some interventions will seem appropriate independent of a nation’s mean income. For example, if residents of a nation lack access to clean water, aid seems acceptable, regardless of Gross Domestic Product (ie., regardless of whether the nation as a whole seems wealthy enough to appear an

³¹⁷ Amartya Kumar Sen, *Commodities and Capabilities*, Professor Dr. P. Hennisman Lectures in Economics, Theory, Institutions, Policy (Amsterdam Elsevier Science Publishers B.V., 1985), 35. While he is discussing Gross National Product in this case, it is descriptive of his general approach in contrasting quality of life to the more bluntly circumscribed notions of well-being.

inappropriate target for humanitarian intervention).³¹⁸ Such decisions will need to be made with reference to the importance of the functioning or capability set under discussion (which can be determined, in part, by whether it is a basic functioning). Thus, while it might not seem necessary for a wealthier country like the US to spend resources to provide a vehicle to everyone in an impoverished nation, it is plausible that government efforts to ensure that everyone has enough food and water to survive would garner public support. Being deprived of car ownership may reduce the overall quality of a life, but it is not essential to basic functioning in the way that nutrition is, and thus fails to constitute an intervention-worthy circumstance.³¹⁹

The idea of a minimal standard can be extended to discussions of EJ communities. For example, if we look at two impacted communities, and find that in important respects, like air and water quality, one is significantly worse off than the other, this does not tell us that the community with healthier conditions is not worthy of concern. Minimal standards create important boundaries for designing interventions and determining need. Although we may frequently be able to find a group or community worse off than the one we are investigating, this needn't settle the issue of whether the better off community is deserving of some form of help. The idea of a "patent injustice"

³¹⁸ Obviously, achievement of basic functionings often tracks financial status. However, there are also myriad cases where those in power have considerable resources that are not shared with the rest of the populace, making GDP a poor measure for understanding the circumstances of individual citizens.

³¹⁹ This might be a good moment to point to the social values that certain types of ownership can bring with them. Sen repeatedly points to the Smithian idea that the complex functioning of being able to "appear in public without shame" is important in evaluating a person's well-being. (Sen, "Capability and Well-Being," 6.) What is required to achieve this will vary with social context. Thus, while vehicle ownership may not be a necessary component of such a function within the context of a poorer nation or one in which cars are not an important part of daily life, lacking a car may present certain social barriers where car ownership is more widespread. Hence, utilizing public transport may cause significant shame within some social contexts, but not others.

thus provides a necessary conceptual tool for determining when and how policy interventions need to be made.

Health as Basic Functioning

Of these basic functionings, Sen thinks health is the most important.³²⁰ This is motivated by his belief that it is “among the most important conditions of human life, and critically significant constituent of human capabilities which we have reason to value.”³²¹ What this tells us is that, in order for a capability set to be truly choiceworthy, it must include good health as one of its functionings. While this is true of all of the basic functionings, Sen provides a special place for health, because considerations of health seem to cut to the heart of how we evaluate lives.

Failure to achieve good health often suggests that one lacks the capability for such achievement, as “we tend to give priority to good health when we have the real opportunity to choose”.³²² This is evidenced by the fact that it is such a widely-valued

³²⁰ Fabienne Peter has argued that, because of its complex nature, health shouldn't be treated as a functioning, but as itself a capability set. She suggests this because it seems to be composed of several functionings (“being able to move around, not being tired, etc...”) I find her claim here quite compelling, though it is not one that I will follow in this work. (Fabienne Peter, "Health Equity and Social Justice," in *Public Health, Ethics, and Equity*, ed. Sudhir Anand, Fabienne Peter, and Amartya Sen (Oxford: Oxford University Press, 2004), 97.

³²¹ Amartya Sen, "Why Health Equity?," *Health Economics* 8, no. 11 (2002): 660.

³²² Ibid.

Sen admits that people may choose not to achieve good health, like the relatively wealthy person with a strong aversion to visiting medical doctors or the hunger striker who sacrifices her health for a political cause, but I'm not sure they undermine the view completely. Specific counterexamples don't necessarily sink the project, especially if we think about this issue at the community level. While a large community of persons who intentionally fail to achieve good health is possible, it would be surprising to find one in actual existence.

The notion of a “real opportunity to choose” is also important. Sen acknowledges that addictive behavior may make such “real opportunities” impossible. It would also seem that choices and behaviors that are socially or culturally ingrained as perhaps operate in the same way.

functioning, and constitutes one of the core things people value. On a larger scale, widespread failure to achieve health in a community or society often indicates an unjust distribution of the goods required for achieving health. Various social circumstances, like poverty, lack of health insurance, discriminatory practices on the part of health care providers, or the environmental hazards that are the focus of this work, may be implicated in community or nation-wide failures to achieve good health.

For Sen, discussing health should not center solely on health care, or even health itself, but is much more inclusive, involving nutritious food, social support, a healthful environment, etc...³²³ Hence, a full explanation of the distribution of health achievement requires examining the social policies and institutions that make achieving health more or less possible, the relation between social status and good health, and the process by which good health is achieved.³²⁴ In his discussion, Sen seeks to ensure that people are treated fairly in access to the determinants of health, independent of outcome or achievement. Practically speaking, this requires that allotments of health care and the other determinants of health occur equitably, and without discrimination against particular groups or individuals. Thus, even if a person faces such significant challenges to health that no amount of financial or other support would lead to her experiencing the same level of good health as a disease- and disability-free person, this does not entail that she

³²³ Similar to the way Daniels conceives of the “social determinants of health” discussed in Chapter 5.

³²⁴ Sen, "Why Health Equity?," 660-61.

should not be provided with the resources to bring her as close as is possible to achieving good health.³²⁵

With this apparatus in place, we can begin to capture what is at stake in discussions of health, and why Sen thinks the focus should be, as he suggests equity, and not equality. While equality is necessary to a discussion of equity, the two are not coextensive. Equal distribution of goods will not necessarily issue in an equitable distribution of good health. Of concern here are differences that impact individual ability to use goods. Among these are physical characteristics, environmental conditions, social conditions, and community norms.³²⁶ If we think of a person who has PM-related respiratory problems, she will require greater health care to achieve the same level of health (where health is understood in the broad sense of good functioning, and not just the absence of disease) as a person who has not faced the exposures. And, it is the achievement of health that is the focus of our distribution, not the goods that she will require to achieve such good health.

An equitable system needs to take such differences into consideration in both distributing goods and conceiving of health. This requires that policy decisions focus on health outcomes, and not initial distributions of resources. Practically speaking, this might require the availability of a greater quantity of resources for persons who have greater difficulty in achieving good health and the related functionings, and a smaller share for those who are more efficient, because they are in especially good health because

³²⁵ We see here again Sen's focus on the importance of improving lives in cases where perfection is simply unattainable.

³²⁶ Sen, *The Idea of Justice*, 255-56.

of genetic predisposition, social circumstances, or access to preventative and other health care.

Well-Being Achievement

As Sen himself starts with functionings, I too will begin my analysis there. Well-being achievement, for Sen, describes the states of affairs that a person has been able to achieve (what one does or is in the form of an achieved functioning), related to well-being, (e.g., being adequately nourished or possessing good health). While the specific goals a person values are a product of socio-cultural background and personal preference, her achievement of those goals related to well-being has less to do with her individual values, and more to do with whether she meets shared standards of welfare.³²⁷ In contrast to Rawls, the focus is not on the instrumental value of these achievements, but their inherent value in showing that a life is good. Thus, we begin by looking at who people are, and what they have achieved.

In thinking about environmental injustices, we can return to the familiar example of health achievement, to which Sen gives special priority, because of its special role in human life. Many factors in our representative community can create challenges for good health. For example, the presence of heavy metals released by nearby factories can result in developmental problems and cognitive impairments. Particulate matter in the air is often implicated in the development of respiratory problems, ranging from shortness of

³²⁷ Although her ability to achieve the things she values, or express her preferences, can have significant effects on well-being.

breath to increased risk of lung and esophageal cancer. Contaminants from manufacture and waste disposal that seep into the water and soil are related to developmental issues (perchlorate) and increased rates of cancer (PCBs).³²⁸ In all of these cases, if persons fail to achieve good health, this failure is intimately linked to distributions that make this achievement impossible, or at least unlikely.³²⁹

Despite his concern with the inherent value of health, Sen's view does not neglect its instrumental value in the achievement of other potential goods, as he acknowledges that even minor departures from good health can have significant consequences for other achievements. For example, career advancement is highly valued in US culture. Although asthma is not life-threatening in the majority of cases, it is linked to increases in sick days.³³⁰ Over a full career, taking excessive time off for medical reasons can impact earning potential, either through lost work or failure to advance to more lucrative positions within an organization. Thus, while someone who developed asthma from childhood diesel exposure may still be able to support herself later in life, she could face challenges in meeting her career goals, which both she and her culture count highly in the index of achievements related to well-being.

³²⁸ We also should not forget that our representative community, and most EJ communities, face not one, but multiple hazards, which can have additive and cumulative impacts on health.

³²⁹ Presumably, in such cases, people are not failing to achieve health because they find it disvaluable.

³³⁰ For example, a 2008 study conducted by researchers at UCLA found that in 2005, asthma accounted for 1.9 million missed school days and 2 million missed days of work. Ying-Ying Men et al., "Uncontrolled Asthma Means Missed Work and School, Emergency Department Visits for Many Californians," (Los Angeles, CA: UCLA Center for Health Policy Research, 2008).

Sen also includes in his index of basic functionings some notion of self-respect,³³¹ which he cashes out, taking his cue from Adam Smith, as the ability to appear in public without shame. Awareness that one lives in a place that serves as a metaphorical, and in some cases, literal, dumping ground for other communities can challenge a person's ability to appear in front of others with confidence and self-assurance. Likewise, health problems can also generate shame or difficulty in social interaction. For example, when health impairments make it difficult or impossible for a child to participate in athletics or other school activities, this can impact her ability to make friends and develop valuable social skills. All of this can be extremely embarrassing for children, and can have far-reaching effects.

When environmental hazards limit achievement, they prevent individuals from doing and being those very things that will increase well-being, whether the functionings they fail to achieve are basic functionings that are shared cross-culturally, or those associated with specific individual and cultural values. While good health is an easy example of a basic functioning that is shared cross-culturally, a person might consider religious participation necessary for her well-being, although this is not shared by everyone to the same degree. Thus, failure to attend religious services would harm her well-being in respects that are much more profound than such a failure would be for others. Alternatively, we might think of an achievement like home-ownership. While not everyone in the United States values this to the same degree, it is considered by many to

³³¹ Similar to Rawls, although Sen focuses on achievement instead of only examining the social bases that make self-respect possible.

be part of the “good life”. Here, we have a case of a value that is shared by many sub-cultures within a society, and becomes important to achieve largely because it is shared, even if a person doesn’t herself place a great deal of importance on it. While these two examples are not directly relevant to the experiences of persons in EJ communities, they suggest that investigations must also address failures to achieve functionings that are personal. Thus, a fuller evaluation of the circumstances of individual lives must also consider these individual values.

In evaluating well-being achievement, we must look at the picture of achievements, ranging from those that are basic to those that are individual, and every step in between. It seems clear that there are challenges to achievement in EJ communities, the most notable of which is good health. As Sen suggests, failure to achieve good health typically indicates that there is a failure of opportunity, which is my next topic.

Well-Being Freedom

While well-being achievement focuses on achieved functionings or functioning vectors, well-being freedom addresses the capability sets persons have available to them, and thus measures opportunity. In looking at freedom, we are determining what a person’s capability sets look like, and the range of functionings available to them. As I’ve already noted, freedom, not achievement, should be the focus of policy decisions. This is largely because states can provide citizens with better opportunities to achieve certain goals associated with well-being, like adequate nutrition, but this does not entail that the

state should require persons to make use of the opportunities available to them, as this would limit freedom.³³² Thus, our goal in thinking about environmental injustices should be to understand, and ultimately enhance, the opportunities persons have available to them, but not to require that they achieve certain functionings.

To illustrate well-being freedom, I will begin with an example familiar from my previous discussion. Let us imagine two heterosexual couples, neither of whom has children. Couple A has made the decision that they do not wish to bear and raise children. However, Couple B's childlessness is linked abnormalities in the woman's reproductive organs resulting from pesticide runoff that has seeped into the groundwater in her community.³³³ In terms of achievement, the couples are equally situated, as both have achieved the state of "not having children". However, there does seem to be a difference in freedom between the two. For couple A, the opportunity to bear children was available. Thus, bearing a child was among the options in their capability sets. However, for couple B, such a choice was never present.

Here, it seems that freedom's opportunity aspect is challenged, as Couple B is simply barred from pursuing a particular good that is valued widely.³³⁴ This issue relates to well-being, as I take it that control over aspects of reproductive life is an important component of well-being, even though choosing whether or not to have a child might

³³² Sen, *The Idea of Justice*, 288.

³³³ The women of Kettleman City, CA have experienced this very challenge. (See Sahagun, "Grieving Kettleman City Mothers Tackle Toxic Waste Dump: Each Had Miscarried or Given Birth to a Child with Birth Defects. Their Pain Gave Them the Strength to Fight for Justice.")

³³⁴ Even if Couple B was pleased with childlessness, the process aspect of freedom would still be violated insofar as they were not given any options as to how they would achieve this goal.

seem more closely related to concerns of agency. Failure to possess such control over one's reproductive life seems to be a grave affront to personal freedom, and to be denied choice in such matters has severe consequences for individual welfare.

Turning to the discussion of health more broadly, while widespread failure to achieve good health is likely linked to systemic injustice,³³⁵ lacking the opportunity to achieve good health at the individual level indicates a significant challenge to personal freedom. Hence, if someone in our representative community would have been healthy were it not for the various exposures she faces (for example, she would have possessed the opportunity to achieve good health had she not been exposed to large quantities of particulate matter and other air pollutants during development, which have led to asthma, reduced lung capacity, and other respiratory ailments) her ability to achieve the goal of good health is challenged, and the special importance of health makes this unjust.

Part of our belief that such circumstances are unjust stems from the fact that opportunity to achieve a basic functioning shouldn't be limited. This seems especially true when failures to possess these opportunities seem to track socio-economic status. If access to capability sets that include the basic functionings is limited only to those who live in certain communities or possess certain quantities of wealth, there is a patent injustice of the very form that thinkers like Sen find most worthy of concern. Individually, patent injustices are troubling, but systemic ones indicate significant distributional problems

³³⁵ Sen, "Why Health Equity?."

In addition to patent injustices, we can also analyze environmental injustices by comparisons of well-being. To illustrate, imagine two communities faced with the possibility of becoming home to a plant that manufactures pesticides. In the first community, residents possess the opportunity to participate in meaningful public discussions about new developments and potential environmental hazards, while in the second community, childcare, employment, and transportation challenges make such participation difficult or impossible. Both groups seek to further their well-being goals by preventing the installation of environmental hazards, but the opportunity aspect of freedom is different, as residents of the second community are not truly free to participate due to the various constraints they face.³³⁶ This effectively provides residents of the first community with greater opportunities to ensure their own well-being. Independent of the impact that such circumstances have on health outcomes, the Senian view would require greater opportunities for achieving outcomes that promote well-being.

To further illustrate this comparative injustice, I will return to the representative community. Imagine a community that is similar to our community in many respects, for example, it faces the same social challenges, like poverty, social marginalization, high levels of stress, and poor access to some of the primary determinants of health. While individuals in this community might experience limitations on well-being achievement, the fact that they do not experience the significant health impacts associated with residence in an impacted community makes them comparatively better-off. Although this

³³⁶ Unfortunately, public fora and other means designed to enable community engagement are not always organized or scheduled in a way making them accessible to the most marginalized constituents.

community may still fail to provide residents with opportunities to achieve the basic functionings, (perhaps there are no opportunities for obtaining adequate nutrition or limitations on access to healthcare), the circumstances of the representative community are still worse.

Alternatively, perhaps the residents of both the impacted and non-impacted communities possess the opportunities to achieve the goals associated with basic functioning. In such circumstances, we could still make judgments about the status of the two communities by examining their opportunities and determining what functioning vectors are present in their capability sets. If there is a clear freedom advantage to living in the economically stressed but not environmentally impacted community, residents of the community are still comparatively better off.

However, the goals of justice shouldn't merely ensure access to achieving the basic functionings, although these do provide a lower limit for the justice. If we compare the capability sets accessible to an EJ community to those available in a community where residents are middle-class, face few environmental hazards, and have available to them substantial social resources, we would find that residents of the second community have a much wider range of well-being opportunities available, including many that are unrelated to basic functioning. In terms of welfare, the middle-class community is clearly better off. It seems that our goal should be to ensure that residents of EJ communities not only possess the opportunities to achieve basic functionings, but have access to something nearer the wide array of functionings accessible to the middle-class community. Thus, it shouldn't simply be the case that they be able to raise their children

in an area where they will not face significant health challenges, but that they will be able to pursue opportunities like saving for retirement, purchasing a home, or going on vacation. Obviously, this requires considerable resources, but such distributional concerns are important to acknowledge.

My evaluation of the circumstances faced by EJ communities along the lines of well-being achievement and freedom has illustrated some of the particular challenges to justice faced by heavily impacted communities. For Sen, the requirements of justice involve evaluating both what people have actually done with their lives, as well as those opportunities they have available to them. If certain basic functionings are not achieved, we have reason for concern; as such persons are not meeting a minimal level of welfare. If these basic functionings are not among those that persons are capable of achieving, there is evidence of a problematic distribution of those goods involved in human welfare. However, before closing, I would like to offer a brief discussion of Senian agency.

Agency Considerations

Like well-being, agency can be evaluated along the dimensions of achievement and freedom. Because Sen's view of agency is somewhat broader than Rawls's, and acknowledges the link between agency and well-being, he can capture some things Rawls cannot. Importantly, Sen acknowledges the role that expressions of agency concerns play in human flourishing.

Agency pertains to individual judgment and prioritization.³³⁷ Because agency involves expression of value, the ability to meet agency goals and possess access to a variety of opportunities to exercise agency is extremely important in enabling persons to have control over their lives. While well-being goals tend to be fairly stable between persons, it is through the choice and pursuit of agency goals that people express what individuates them.³³⁸ This is not to say that there will not be significant overlap between persons, but people identify with agency goals, and take them up as their own. In a way, it is through the powers associated with agency that persons become “fully themselves”, and thus expressions of agency are essential to being human. Failure to be capable of fully expressing agency and agency goals affects the quality of life insofar as it makes it impossible for a person to robustly express their own values. For my current project, it’s important to examine how the attitude that individuals and political states take toward agency impacts the capacities of individual agents.³³⁹ A life where agency achievement or agency freedom is challenged is impoverished in a significant sense.

Limitations on agency can be illustrated with a return to the familiar discussion of participation in decision-making processes that impact one’s life. Environmental injustices often involve not only the existence of hazards in one’s community, but failures to fully include all stakeholders in discussions of the placement and operation of those

³³⁷ Sen, *The Idea of Justice*, 288.

³³⁸ Though certainly the weight persons give to well-being concerns does express some value. Alternatively, as in the Gandhi example, agency goals may operate in ways that counteract those goals associated with well-being, which is another means through which persons can express preference and value.

³³⁹ Some of the concerns presented here mirror those developed in Chapter 6 with the discussion of Rawls’s social bases of self-respect, as well as the importance of the power of rationality.

hazards. Such circumstances seem especially troubling when the communities are already heavily impacted by environmental assaults.³⁴⁰ When people living great distances from communities make decisions without regard for those affected by their choices, agency, in both its achievement and opportunity manifestations, is undermined. In such circumstances, people are not only unable to achieve their own agency goals (as they do not participate in public decision-making), but are not even given the opportunity to do so. When agency is limited, not only are people prevented from achieving important life goals, but overall quality of life is also depleted. This is because agency freedom and achievement are important components in evaluating lives, but also because failures to achieve agency goals can impact well-being.

Unlike the Rawlsian diagnosis, a Senian analysis focuses on the interface between agential opportunity and achievement, well-being, and overall quality of life. When health effects, like reproductive failures resulting from exposure to pesticide exposures, effectively eliminate the potential to achieve certain agency goals, this is not problematic merely because it poses a limitation to an valuable human capacity, but also because it prevents someone from working toward and meeting a goal that they have reason to value. Failures to achieve agency goals can have great impacts on well-being, because they are essentially failures of valuing.

Returning to the couple rendered childless by exposures to environmental pollutants, the fact that they lack the agency freedom to pursue parenthood, if they found

³⁴⁰ Responsible parties may be government authorities charged with protecting public health or making zoning decisions, or corporate representatives who make choices about where various facilities will be placed. See Chapter 2 for further discussion of these issues.

such a goal desirable, would certainly affect their overall well-being. Being thwarted in achieving fairly important life goals seems likely to be harmful to one's self-image and self-understanding. Such, one would imagine, would be the case in a wide variety of circumstances where agency goals are thwarted.

Further, we should also think about what a life in which one has very few opportunities to pursue what matters will look like. As I noted earlier, it is possible for people to adapt their expectations to the circumstances in which they live, but this does seem rather troubling if persons are constantly feeling forced to realign their preferences to a more meager set of options. While failures to achieve the goals that one chooses may cause stress, sadness, and disappointment, knowing that those opportunities aren't even available seems like it would lead to lack of concern for other important aspects of life. Thus, we must take agency concerns into consideration in our evaluation of well-being, even in circumstances where the goals under discussion don't appear to have a direct impact on a person's well-being.

The Senian Challenge

Given the challenges to both achievement and freedom created by environmental injustices, the Senian perspective offers an alternative assessment to Rawls, especially with its greater focus on well-being and reducing injustice. In providing both comparative tools for addressing the quality of a life, while also offering a basic standard for evaluation, Sen's work provides useful guidance for better understanding human lives. Because we can evaluate a person's life along a variety of dimensions, we have a wider

range of possibilities for intervention, and more precise tools for determining whether such interventions might be appropriate. While a failure to achieve any one of the basic functionings might be a clear example of injustice, Sen allows for further evaluation by creating a framework for making comparative judgments.

Although I will provide a fuller picture of the appropriate response to environmental injustices in the following chapters, the analysis I have offered in these last pages does enable me to make some tentative statements regarding how we should proceed. To begin, the basic capabilities, or the capacity to achieve the most basic functionings, especially health, should be a primary focus. While good health cannot itself be distributed, the factors that impact the opportunity to achieve it can. Thus, we need to focus on those factors that affect the capability to achieve good health, ranging from the proximity of hazardous facilities to residences to health care provisions that enable persons to repair themselves after various assaults.

Essentially, the goal of a Senian evaluation of environmental injustice should be to ensure that persons are capable of achieving the basic functionings, and have freedom in choosing from among a wide range of capability sets that include those basic functionings. This should extend further to include those achievements that are valuable for persons, as part of what is involved in choice is the expression of value. Such expressions are a key component of agency, which is deeply involved in our evaluation of human lives. Each component requires a significant focus on the importance of participation in public life, and the recognition of others involved in developing a sense of oneself as a participant in political and social processes.

By focusing on concerns of well-being, Sen is able to capture some important concerns associated with environmental injustices that are outside the scope of Rawls's project. Additionally, I think there is much of value to be gained from his discussion of freedom, particularly the fact that free choice necessarily requires that persons have a variety of choiceworthy options, and that choice itself is an important component in evaluating a life. The idea that choice is key in evaluating a life, and that evaluating a life involves looking at all of the factors that impact well-being and agency, provides valuable guidance for the project of evaluating and addressing environmental injustices.

9. Modeling Environmental Justice: The Structure

Thus far, my goal has been to describe and diagnose the challenges presented by environmental injustices. Now, I'd like to switch to thinking about responses to those injustices. Ultimately, my goal is to provide a robust model for practical decision-making, guided by the ideas of justice developed by Rawls and Sen, and informed by what is practicable and desirable given legal and technological limitations and community preferences. While the previous analysis is necessary for understanding the experiences of residents of impacted communities, here and in the next chapter I present the positive model of justice for making interventions into this important political and social issue.

The model will require some basic notion of justice to give it structure. This idea will be very general in nature, as it is designed simply to provide minimal guidance for the issues the model needs to address. Importantly, the particular characteristics of individual persons and communities should not be lost in the effort to provide greater normative force. Flexibility is necessary, and thus the approximate notion of justice must not neglect the significant and meaningful differences between persons. While it is challenging to conceive of an idea of justice that will work for persons and communities with radically different values, there are some basic ideas of what is required for health and well-being, based in biological notions of human functioning and shared social and political values. I do not intend to make any particular claims about what it means to be a

member of a human community, but to provide enough content to give a viable picture for addressing certain environmental forms of injustice.

In this chapter, I provide some of the basic requirements for such a model and offer a general discussion of individual responsibility for negative health outcomes. The goal here is not to answer specific questions of justice, but to provide the framework for doing so.

An Idea of Justice for Environmentally Impacted Communities

What is most fundamentally special about EJ communities is that they face a number of environmental hazards, which, when coupled with the special susceptibilities of residents, can lead to negative health and social outcomes. In offering a general guiding idea of justice, I do not intend to make any strong ontological claims about what humans are, but simply to discuss what justice requires based on human experience and value. Thus, I will remain agnostic on many questions related to the status of persons, in favor of a general discussion that takes Rawls and Sen as its normative guides.

Ideas of justice are frequently tied to the equality of human goods like well-being, freedoms, resources, rights, and political powers.³⁴¹ While thinkers have utilized widely divergent barometers to measure whether the goals of justice have been met (utility, achievement of rights, etc...), most view justice as intimately linked to the capacity to engage in certain forms of individual, social, and political activity. These activities range

³⁴¹ For a general discussion see Gregory Vlastos, "Justice and Equality," in *Social Justice*, ed. R. Brandt (Englewood Cliffs: Prentice Hall, 1962).

from things like voting in elections, to integration into one's society and having a career that fulfills needs or goals.

When described from the Rawlsian perspective, this requires that individual citizens have access to career opportunities and are capable of exercising the two moral powers requisite for citizenship (reasonability and rationality), while Sen's view incorporates concerns of well-being and personal preference for a more robust idea of personhood. However, both place great value on participation in the public sphere and the capacity to view oneself as a valued member of society, and in both cases, distributive concerns center on whether the persons have access to those resources necessary for full participation in civic life. For example, on the Rawlsian view, citizens require a certain share of social goods like rights, liberties, and opportunities, and it is possession of these that makes civic participation possible, while for Sen, distributions must focus on providing access to capability sets that include the relevant civic abilities.

The idea of environmental justice must ensure full social and political participation and integration for those who live in already impacted communities, or who live in communities vulnerable to future insults (potential EJ communities). This involves recognizing that both personal and public projects require a certain degree of social integration to fulfill. Further, in addition to ensuring access to certain forms of participation, we must prevent harms that can impact health and well-being more broadly. With this in mind, the broader goal of this work is to ensure that individuals have access to those goods required to fulfill the general goals associated with full participation in the political and social spheres, while preventing harms from environmental assaults that can

challenge well-being or individual agency, and working to restore persons to a fuller set of capabilities when these are compromised.

An important example of what needs to be insured for all citizens is good health, which plays a role in our discussions of both agency and well-being. As I have already noted, both Rawls and Sen bring different perspectives on this issue to the table, but for my current project, I believe that we can view them as complementary. As Sen argues, good health is a necessary component of well-being, but is also required for the achievement of a variety of other goals. Rawls views health as instrumental for achieving specific career goals and rational goals more broadly. Both have the resources to take health, and having good health, seriously, and we can see them as working in tandem in this regard.

There are three basic components of the Senian view that I will incorporate into the guiding idea of justice. First, I think that his focus on the necessity of comparison for making decisions about the actual circumstances of person's lives is extremely helpful. Comparative judgments allow for determinations of need, while enabling us to judge whether efforts to further the goals of justice have been successful, both of which are necessary when funds are limited, but determinations of need must be made.

Complementary to this comparative concern is the view that we should seek to move persons whose lives depart radically from the base level of justice (given in terms of the basic capability sets) closer to justice, even in circumstances where "full" justice is out-of-reach. Again, working against injustice (and not simply "for justice") provides an important component of the toolkit for addressing environmental injustices, as the goals

of such efforts should require improvement in circumstances where even incremental changes can greatly affect welfare.

Finally, I take from Sen's view the belief that a robust theory of justice must incorporate some idea of well-being, even if it is only defined with reference to particular individuals or groups, and does not hold authority for all members of the species.³⁴² With thinkers in the Marxist tradition,³⁴³ I believe that we needn't think that the right (reasonable) serves as a constraint on the good (rational), but that the two should be brought together, provided that the notion of the good with which we work is sufficiently comprehensive and general.³⁴⁴ Additionally, while Rawlsian rationality involves the ability to pursue a particular notion of the good, it still fails to account for the freedom to choose from among different opportunities and different methods for achieving those opportunities. By including well-being and choice in evaluating human lives, Sen can capture important injustices, and better describe the circumstances of lived existence. Since my project focuses on actual people and the circumstances of their lives, this is of great value.

Thus, the Senian idea of justice will play a slightly larger role in the model I develop here and in the following chapter. However, this is not to dismiss the important

³⁴² Although even Sen believes that some things are shared widely enough, like good health, that they can be understood as "basic".

³⁴³ Gerry Cohen, for example, presents such a view in *Rescuing Justice and Equality*. (G.A. Cohen, *Rescuing Justice and Equality* (Cambridge: Cambridge University Press, 2008).)

³⁴⁴ Whether Sen's theory meets the criterion is outside the purview of this work, but I think that by locating the good with reference to individual and community-level experiences of the world, Sen at least goes a long way in addressing this concern. Even things like the "basic functionings" are understood with reference to shared conceptions of what is necessary for human existence, but are not known antecedent to empirical investigation.

respects in which the Rawlsian picture of justice informs the project, especially with reference to the political and social institutions whose goal is to further justice.

The Model's Structure

Chapters 2-4 outlined the specific challenges faced by EJ communities, and a model that seeks to fully address the problems associated with environmental injustice must address all of these concerns, including the larger picture of systemic injustice. For the widespread distributional disparities that lead poor communities of color to become the homes for environmental hazards, the best method may be the creation and implementation of more stringent and responsive regulatory measures whose goal is the prevention of harms. Such measures must be responsive to data insofar as they consider important facts about individuals and communities to better meet their needs. Attached to changes in regulatory mechanisms, there is need for greater enforcement and understanding of existing regulations, perhaps linked to harsher penalties for violations of established limits and regulations. Thus, the model needs space for what I will broadly class as preventative measures.

While instituting new regulations for levels of contamination may be extremely important, developing and implementing new policy can take years, and during those years, people may continue to face the risks linked to exposures to chemical pollutants. I will discuss how we should address existing harms through two different types of measures. The first are restorative measures, which seek to compensate people for harms they have received, and return them, as close as is possible, to a pre-harm state. This can

involve financial compensation, removal of hazards, and a variety of other options. Second are mitigative strategies, which focus more on stop-gap measures to prevent or limit further exposures that may lead to greater harms. Mitigative measures are the least desirable in some respects, but can provide some valuable health protection in circumstances where they become necessary.

Rawls gives us many of the tools required to think about just institutions, while Sen examines what justice requires at the level of individuals and communities. To some extent, Sen provides the philosophical tools for thinking about how to alleviate existing injustices, while Rawls gives a means for exploring an idealized model of justice itself. Thus, Rawls's work can provide significant institutional and structural guidelines, which are necessary for thinking about some of the more systemic changes that might be required to prevent injustices. As Rawls himself acknowledges, the project of justice as fairness may not be able to respond to all of the challenges to justice and forms of injustice.³⁴⁵ Importantly, Rawls and Sen inform different aspects of my framework. Ultimately, if we think about them as complimentary, we can learn a great deal.

Throughout the broader conversations of quality of life, we cannot neglect the extraordinarily important role that notions of self-respect play in our thinking about social justice. Rawls addresses this by focusing on the "social bases of self-respect", which are the social goods required for an individual citizen to see herself as a valued member of her society. Alternatively, Sen focuses on the values of individuals and communities,

³⁴⁵ The implications of such an admission are themselves interesting. Rawls's admission suggests that he doesn't take this to be such a significant failing, and we might agree with him that the harder cases muddy our intuitions. However, it also seems that a notion of justice is most necessary at the very moments where are intuitions fail us and the answers aren't obvious.

which are expressed via freedom of choice. Ultimately, both share the belief that for individual citizens to participate fully in the public and civic realms, they must view themselves and their opinions as valued by others.

To further this goal, we must take the concerns, values, and desires of individuals and communities seriously when deciding on the requirements of justice (which can sometimes mean working to remove degrees of injustice), and in making policy decisions. While the challenges that individuals and communities face may be similar in many important respects, the steps taken to address those challenges must be responsive to particularities. This serves both a practical purpose by providing solutions that will appeal to those who are affected by them, but also shows a respect for the values and opinions of individual persons, which is of great importance for both Sen and Rawls. This respect serves not only a practical function, but provides support for the normative claims based in our idea of justice.

However, the extent to which the particular values and desires of a community of individuals will be readily available or coherent may rely, to some extent, on other factors. Communities come in different sizes, and historical and social characteristics may influence how values are articulated, and whether these values are shared or vary greatly between individuals, families, and social groups. Members of a neighborhood where many families have lived for generations will have a very different conception of their “home” than residents of a new subdivision where the only thing uniting residents is geographic location. Social and historic factors can also influence the extent to which community members become actively involved in fighting or addressing threats from

outside. While some communities have well-organized and cohesive networks of activists and concerned citizens who are informed about circumstances in their community, others may not have this information, or lack the infrastructure to address community concerns.

Ultimately, some components of our model will extend beyond what was described in earlier chapters. For example, while many residents of EJ communities lack access to adequate health care, this is a quality that many communities share, and is not particular to EJ communities. Thus, my analysis in previous chapters largely neglected this aspect of EJ communities. However, our approach to eradicating environmental injustices must take poor access to health care into consideration, as it can significantly impact health and other outcomes, and exacerbate the impact of environmental assaults. Poverty also plays a role in discussing EJ communities, and environmental injustices will likely be impossible to fully prevent without a radical redistribution of health care and other resources. While I will suggest some modest distributional changes, discussing overall distributions of this sort is a topic for another project.

Finally, a precautionary approach should be incorporated into the model. As I noted in Chapter 2, the onus is frequently on those harmed to show that they have been harmed, or will likely be harmed, before they receive any attention from political or legal authorities. A precautionary approach would shift the burden of proof away from community members, and place it on the shoulders of governmental authorities and corporate or industrial representatives. In cases where the health of individuals and

communities lies in the balance, it seems appropriate to err on the side of caution.³⁴⁶

Having such ideas already in place would also make it easier for individuals and communities to work against the placement of new hazards. A new paradigm for thinking about preventing harms might also create more stringent requirements for environmental impact analyses, which would ultimately be more health protective.

Responsibility for Health-Impacting Choices

Before continuing, I'd like to briefly discuss individual responsibility for choices that impact health. While exercising control of over one's life is important, health choices may compound or contribute to the effects of environmental hazards, and thus must be taken into consideration.³⁴⁷ However, determinations about responsibility do not commit us to saying that certain harms do not constitute injustices, and my goal is simply to think about evaluating responsibility and its role.³⁴⁸

³⁴⁶ It seems fairly obvious that such a view would be more than objectionable to those who represent business interests, and for this reason, would be difficult or perhaps impossible to integrate into an actual piece of policy.

³⁴⁷ The legal issues here are complicated, as causation can be difficult to prove especially when there are multiple possible causal stories that can be told. For example, in *McAllister v. Workmen's Compensation Appeals Board*, it was determined that the deceased's smoking habit did not preclude his widow from seeking compensation for workplace exposures linked to an increased risk of cancer. ("Myrtle Mcallister V. Workmen's Compensation Appeals Board and City and County of San Francisco," in *69 Cal.2d 408* (Thomson Reuters, 1968).)

³⁴⁸ Personally, I believe strongly in a nationalized system of health care, and am not upset that certain individuals would receive care, for which some of my taxes pay, for ailments that may have been preventable. However, this question seems ancillary, at best, to the concern here. My goal is merely to discuss what justice requires us to do for those living in environmentally impacted areas. Thus, we aren't making a decision about what society owes to the health of every individual (though something may fall out of our discussion), but what is owed to those harmed by particularly egregious environmental injustices.

There are a number of different behaviors we can examine in discussing responsibility for health. Let us take a long-term cigarette smoker as our example. In the contemporary United States, it seems reasonable to think that everyone should be aware of the adverse health outcomes associated with cigarette smoking. Thus, when a smoker chooses to engage in this behavior, with full knowledge of its harmful affects, it seems that she ought to be held responsible for that choice.³⁴⁹ Requiring individual responsibility is a way of respecting the value of choice. However, while smokers are more vulnerable to some environmental assaults, we want to avoid making the claim that their susceptibilities are comparable to those faced by children, despite some practical similarities. The child who develops asthma at an early age due to hazardous exposures and the smoker may have similar vulnerabilities to airborne pollutants, but the fact that the child's sensitivity was not self-induced should be viewed as morally significant.

Alternatively, we might ask whether people ought to be held responsible for negative health outcomes resulting from failures to engage in health-promoting behaviors. Eating healthful food is a useful example here. A person with high cholesterol or heart problems who chooses to eat red meat and fried food at every chance, even when provided with healthier options, has made a choice, and the negative health effects resulting from that choice are, in some respects, that person's fault.³⁵⁰ On the other hand, it can be very difficult for people in low-income neighborhoods to access items like fresh

³⁴⁹ Addiction also plays a role here, but it is something I will bracket for the sake of the current discussion.

³⁵⁰ This does of course get really complicated when you're discussing someone who has been eating in a certain way for many years, especially if in their youth, when many of these habits develop, they were unaware of the health problems associated with particularly dietary choices.

fruits and vegetables.³⁵¹ This can result from the fact that the only purveyors of food are liquor or convenience stores, which stock only snack items and sugary drinks, and fast food restaurants, and visiting grocery stores and larger markets requires access to transportation and significant expenditures of time.³⁵² Under such circumstances, it seems reasonable to argue that persons in such neighborhoods cannot be held responsible for the negative health effects resulting from dieting choices to the same degree as those who actively choose to eat unhealthy foods when other options are readily available.

Regular dental care, basic hygiene, and adequate clothing and shelter are also necessary for making a healthy human being. As with nutritious food, access to these necessities can be challenged by poverty and social immobility. Some of this can be directly related to difficulties in accessing consumer items, while other challenges are linked to ignorance. Thus, if a person truly didn't know that the behavior in which they were engaging was harmful, we would analyze their degree of responsibility differently.

It is also important to discuss the operations of choice, and how a person's particular circumstances can make healthy choices challenging, and unhealthy choices

³⁵¹ The same challenges exist in many rural communities, which aren't large enough to support grocery stores. I'm not even going to address the challenges of trying to eat an organic or largely organic diet, as organic foods can be prohibitively expensive even for the solidly middle class.

³⁵² Recently, the WIC (Womens, Infants, and Children's) program in California, which assists low-income families in purchasing food, has been extended to include more healthy choices like fresh fruits and vegetables, whole grain cereals and breads, and soy products. California is not alone in moving toward providing greater access to more healthy options. (California Department of Public Health, "Women, Infants, and Children Program," <http://www.cdph.ca.gov/programs/wicworks/pages/default.aspx>.)

very easy or more socially acceptable.³⁵³ Abuse of alcohol, narcotics, and other substances can have deleterious effects on health, making persons more susceptible to environmental insults, and importantly, there exists a linkage between unemployment/underemployment, poverty, depression, and substance abuse.³⁵⁴ Despair can lead people to engage in self-destructive behavior, and while it does not have this result for every person, we cannot ignore the role that social and economic conditions play in determining life course.³⁵⁵

Questions of responsibility for health impacting choices can be addressed by discussing what persons might reasonably have done otherwise to achieve a different health outcome. I suggest that the important categories of analysis for this discussion are knowledge and access. While not exhaustive of the possibilities for describing responsibility, these two categories provide a means for interrogating what is at stake.

Knowledge simply means whether a person knows the relevant facts about the behavior, and its relation to potential harms or benefits. Someone who “knows better”, but continues to make unhealthy lifestyle choices seems responsible for the related health

³⁵³ “Peer pressure” is a version of this, but it must be acknowledged that social pressures or expectations can play a very powerful role in decision-making, and that concern for rebuke at the hands of one’s social group can be a very compelling reason to engage, or not engage, in certain forms of behavior.

³⁵⁴ National Institutes of Health, "National Institute of Drug Abuse: The Science of Drug Abuse and Addiction," <http://www.drugabuse.gov/nidahome.html>.

³⁵⁵ We should also note that social and economic status (as well as factors like gender, age, disposition, etc...) will have a significant influence on what life prospects an individual would see as worth pursuing. In my peer group and family, working to attain a Ph.D in Philosophy is seen as odd, but not unbelievable (though the degree to which it makes me aberrant depends on precisely the way my peer group is defined), while everyone would have been shocked if I had become a prostitute or a crack dealer. However, I can imagine a considerable number of social milieus in which pursuing doctoral work would simply not even “be on the table” as something one could do with one’s life, and criminal activity might seem much more feasible as a means for supporting oneself.

effects in a way that someone who doesn't "know better" is not. Thus, it would make sense that the smoker who is unaware of the dangers of smoking (like many who began smoking in the earlier part of the twentieth century), should be viewed differently than someone who is aware of the dangers cigarettes pose, but continues to smoke nonetheless.

We might also wonder whether there exists a responsibility to become knowledgeable. Persons certainly should not be expected to know what only experts would understand,³⁵⁶ but we may expect people to have a certain level of knowledge, particularly in the role of parent or caretaker. Thus, it might seem necessary that a parent know more about childhood vaccinations than someone without children. But, many issues are not so clear. We turn some degree of responsibility for our own protection over to the government through our participation in the political system. The existence of agencies like the FDA, the EPA, and OSHA are thought to be sufficient to protect people from dangers at work and in the home, alleviating people from responsibility for staying informed about the latest scientific research. Agencies themselves often work to perpetuate the idea that they have both the power and authority to protect citizens, making those citizens feel less responsible. If such agencies fail to adequately protect health, this is unfortunate, but does not entail that responsibility should then fall on the persons impacted by these failures.

³⁵⁶ MDs, RNs, and other medical professionals are obligated to have a much better understanding of the mechanisms by which diseases develop, and of the most recent developments in medical technology, but it seems fair to assume that non-professionals shouldn't be held to the same standards.

While knowledge focuses on what people should understand, access pertains to whether a person possesses the resources required to achieve good health. This can include access to important determinants of health like nutritious food and adequate shelter, but also whether one has access to the facilities and support required to cease detrimental behavior.³⁵⁷ Someone who has access to those goods that aid health, but fails to utilize them seems more responsible for resulting health problems than a person who does not have access to such items or social goods and subsequently fails to achieve good health.³⁵⁸

However, knowledge and access may not fully answer our questions regarding responsibility. Having knowledge of the health implications of a particular behavior might not entail full responsibility for any resulting detrimental health effects, and access to goods that promote health might not be sufficient to show that a person is responsible for a particular health outcome. Ultimately, while the broader categories can aid in evaluation, a true investigation of responsibility will require evaluation on a “case-by-case” basis. This means that we must, in every case, work to parse out what a person legitimately could have done otherwise to protect their health, and the severity of the environmental impacts they face.

³⁵⁷ I include here rehabilitation facilities, networks of support for addicts, and other social structures that enable individuals who have substance addictions to obtain help. We may not ultimately argue that addicts who don't have access to treatment choices are not responsible for their addictions (as there must have been an initial choice that resulted in a set of addictive behaviors), but we cannot deny the importance of the role played by untreated addiction, as both physical and psychological addiction can impact individual choice in fundamental respects.

³⁵⁸ Again, Sen will help guide the discussion here. For him, the question of whether persons have the capability to achieve good health is much more important than whether they choose to exercise that capacity.

In the context of our model, responsibility plays its most important role with regard to questions of restorative justice and liability for mitigative efforts. Individuals who engage in activities that are not health-promoting may not deserve the same level of compensation for harms resulting from environmental exposures. Thus, someone who develops lung cancer due to a combination of long-term smoking and diesel pollution might not be owed the same level of compensation as the non-smoker whose cancer was solely the result of diesel pollution.³⁵⁹ However, it does seem clear that both are, all things considered, worse off because of the diesel pollution. At the same time, if we find that an individual should not be held responsible for her health impairments, the burden should fall on the commercial or industrial power responsible for the harms or the agency that failed to appropriately protect health.³⁶⁰ Compensation should be meted out on the basis of responsibility for harms, and responsibility for harms should evaluate what a person or community might reasonably have done differently to achieve a different health outcome.

I will not pursue responsibility further as I fill out the model in the next chapter.

What is important to remember is simply that we should consider the role choice plays in

³⁵⁹ I don't think that even under such circumstance, those responsible for the diesel pollution are entirely off-the-hook. Although they may not bear full responsibility for the harm caused, there is certainly a sense in which the diesel emissions exacerbated a problem that might have happened anyway.

³⁶⁰ I want to avoid taking the position that certain persons or communities are incapable of consent, as Daniel C. Wigley and Kristen Schrader-Frechette have argued based on a view of informed consent taken from medical ethics. In order for the siting of a facility to be justified, residents who will be impacted by it must consent to its placement by meeting four general criteria. These conditions require that "risk imposers must disclose full information about the threat; potential victims must be competent to evaluate it, they must understand the danger; and they must voluntarily accept it." However, "a community's severely depressed economy, high unemployment rate, and low level of education" jeopardizing the community's ability to meet the understanding and voluntariness requirements. (Daniel C. Wigley and Kristen Schrader-Frechette, "Environmental Justice: A Louisiana Case Study," *Journal of Agricultural and Environmental Ethics* 9(1996).)

thinking about negative health outcomes, and whether certain sorts of choices should impact how we treat persons who have faced exposure-related harms. Working through individual cases to determine the specific extent of individual responsibility is something I will leave to those tasked with addressing such cases.

10. A Tripartite Model for Addressing Environmental Injustices

Guided by the idea of justice developed in the previous chapter, which focuses on social and political integration and the achievement of a basic level of welfare, I have developed a model for approaching environmental injustice and categorizing the various responses we should take. By integrating ideas developed in the previous chapters, I provide here a sketch of measures designed to both prevent and alleviate the harms associated with environmental injustice.

Ideally, we would prefer that injustices are prevented, that harms never occur, and that citizens are treated fairly. However, given the non-idealilty of the actual world, we must develop strategies to prevent the harms caused by environmental injustices and respond to cases where such harms have already occurred. I will address three types of measures, the first of which are broadly preventative, and seek to ensure that harms do not occur in the first place. The second category includes responses that are largely restorative in nature, and aim to rectify any damages that have been caused by environmental hazards. The final category includes what I call mitigative strategies, which are intended to prevent further harms and alleviate some of the difficulties associated with living in heavily impacted areas. This category is further split into source and receptor mitigations, the first of which focuses on the hazards themselves, while the second focuses on those who face exposures.

It should be noted that the distinctions I draw here are largely motivated by considerations of clarity and efficiency, and should not be understood as fully exhaustive

of the possible options, nor as entirely separate and separable. Ultimately, I am arguing that real solutions need to be holistic, and in this respect, our ability to distinguish between types of response is edifying, but serves largely as a useful tool for categorization.

Preventative Measures

The most desirable approach should involve preventing harms from occurring in the first place. Under circumstances of ideal justice, either no one would be harmed, or risks would be distributed such that no particular person or group would bear to great a burden. Independent of the particular idea of justice we are operating under, it seems fairly intuitive that a world in which some persons and communities weren't exposed to significantly heightened risks of morbidity and death is more just than one in which such challenges exist. Because of this, ensuring the existence of preventative measures must be one of the goals of the model.³⁶¹

The most basic methods for preventing harms will involve regulatory and institutional shifts, including both changes in policy and greater attention to enforcement.³⁶² These can extend from decisions made at the federal level with nationwide effects, to local zoning regulations. For example, regulations like those

³⁶¹ The adage “an ounce of prevention is worth a pound of cure” seems appropriate here.

³⁶² As I've heard from many community members and activists, and as is noted throughout the literature, the failure to enforce existing regulations contributes significantly to the dangers faced by many communities. For example, while there may exist laws preventing diesel vehicles from idling in residential neighborhoods, these laws mean very little to residents if there is no authority present to ensure that they are being followed.

created by the Clean Air Act and the Clean Water Act help protect health throughout the nation, but zoning decisions are frequently left to the discretion of individual municipalities. To this end, institutional changes must be far-reaching, and involve various levels of government.³⁶³ Further, they must include measures that ensure the full participation of residents of impacted communities, thereby preventing the experience of alienation from the political process.

Because the Rawlsian perspective focuses on the development of ideally just institutions, it is well suited for framing prevention of unjust harms.³⁶⁴ By focusing on access to opportunity, as well as protecting the development and exercise of the moral powers, it provides helpful guidance.³⁶⁵ This involves mechanisms that are more responsive to the status of particular communities and consider the wide range of factors implicated in determining whether a community should be considered healthy and healthful for its residents.

³⁶³ Such institutional structures should also be in place at the international level, and should certainly play a role in regulating relationships between nations. The environmental injustices perpetrated by wealthier nations on developing countries have been well documented, and the effects of global climate change will likely be felt most strongly by developing nations.

³⁶⁴ Some basic ideas of just and unjust harms are presented in Chapter 1. While all harms or injuries may be unfortunate, they are only unjust in such cases as they might have been prevented, but were not. Thus, if it were impossible for no one to be harmed by something, it might not be unjust, although there may be injustice in the distribution of the harms. For example, our current society requires locations for the placement of solid waste. Inevitably, someone will be displeased with the way that such facilities are sited. The anger that one group feels regarding the siting of such a facility might not reflect an injustice, but if it were found that placing such facilities in communities meeting a certain set of criteria were a systemic approach to siting decisions, this would likely present an injustice.

³⁶⁵ Obviously, changes in methods of production and means of consumption will go a long way to alleviating certain of the dangers confronting impacted neighborhoods. However, the scope of this project is a bit more modest, and though such systemic changes are necessary, they are not my primary goal.

Health

I will turn first to the discussion of health, the implications that failures to achieve good health can have for persons, and why good health is an essential component of human flourishing. Here, Sen's focus on the non-instrumental value of health should also be considered. To begin, preventative measures need to ensure against challenges to good health that impact individual opportunity. In Chapter 5, I described how exposures can impact the individual ability to meet career and other goals. Part of what is under consideration is determining the threshold for what constitutes such a harm. Because people, especially in places like our representative community, face so many exposures from such a wide variety of sources, the risks of which are exacerbated by social and economic conditions, determining this can be challenging.

From a policy perspective, Fair Equality of Opportunity can be preserved if persons are capable of achieving those things they would have been able to achieve in the absence of environmental hazards. Practically speaking, this means that small exposures might not necessarily be considered problematic if they do not make persons worse off than they would otherwise have been. For example, even if a person living in our representative community faced exposures to PM, fair opportunity might still be maintained if she had open to her a variety of opportunities for career advancement (similar to those with the same motivations and talents). Importantly, nearly all professions require some basic level of good health in order for individual practitioners to make even minimal progress.³⁶⁶

³⁶⁶ See the discussion of asthma in chapter 8.

If good health is necessary for ensuring fair equality of opportunity, then there must exist institutional structures to ensure its fair distribution. Practically speaking, health is not, by itself, a good that can be distributed,³⁶⁷ but the social determinants of health can be. These include social goods like access to health care, access to healthful food, a safe and clean living environment, social support, and other factors implicated in the development of good health. It takes the full spectrum of these goods to ensure proper functioning, and lacking any one will make a person more vulnerable to assaults from environmental agents.

Preventing challenges to opportunity involves recognizing both that some of our current standards for determining what counts as an acceptable exposure must be changed, and that the value of rational goals should not be overlooked. While the EPA is currently pouring considerable funds into looking at exposures and the way that life stresses can worsen impacts,³⁶⁸ there is already strong evidence for believing that the concatenation of numerous factors can worsen the effects of exposures. To prevent harms that impact opportunity, we need better measures in place to ensure that every component of both pollution and vulnerability is included in discussions of risk, ensuring that individuals don't experience harms to health simply because none of the individual sources, by itself, creates a significant risk.

³⁶⁷ Particularly given that certain advantages and disadvantages linked to health are simply results of natural luck.

³⁶⁸ See: Rudolf, "Stress, Pollution and Poverty: A Vicious Cycle?."

For example, we can examine our representative community, and imagine what it was like prior to its current state. At some point along the way, this community went from being an undesirable place to live to a hazardous place to live. While determining precisely what levels of exposures were involved in this shift is something I will leave to the toxicologists, we can imagine that there was a particular moment when levels of pollutants reached the level where they began to limit opportunity. Thus, while a minor cough that appears periodically as result of airborne pollutants may not necessarily constitute an injustice, but when exposures increase to a level where people are missing school and work because of respiratory ailments, there is a clear impact on opportunity.

The appropriate way to address this presents difficulties. If an analysis of the environmental impact of a proposed facility suggests that exposures produced by that facility will negatively impact health to a degree that challenges opportunity, what does this require local and state agencies to do? As expressed by a representative of California Waste Management at a meeting I attended in 2009, why should those who come latest be punished for the emissions of those who came before? This is a difficult question to address. My goal is to focus on health protections, but the role of those responsible for emitting pollutants should not be ignored. In certain cases, allowing a new facility into a community just seems to clearly be unreasonable, given the negative health and other outcomes it is likely to have. However, what should we do in circumstances where different industries agree to lower their emissions, thereby allowing new facilities into the neighborhood? Because the added effects of all the pollutants may still be below the threshold where they would impact opportunity, this may still be troubling, especially

because of the potential challenges to the development of self-respect posed by their very presence (as outlined in Chapter 7). For this reason, levels of emission and exposure should guide our efforts, but should not be the only thing considered in determining the futures of communities.

Turning to the role of good health in the development of rationality, we should acknowledge it as a necessary component of every rational project, insofar as one must meet some minimal standard of good health in order to achieve any particular goal. Additionally, socializing, parenting, participating in the life of one's community, and a host of other activities are part of many people's determinate notion of the good, and can be affected by poor health.

Further, we need to focus not only on the instrumental value of good health, but the value of health itself. This is something that Sen captures nicely, as he views good health not only as valuable for developing one's rational projects, but as itself a measure of how person's are doing. Thus, the focus of concern with good health may begin with ensuring that persons have access to a full range of opportunities, but should extend to thinking about their ability to flourish over a full life. While this is a bit more difficult to pin down than thinking about health and opportunity, it does help to support the important role that health plays in our evaluation of human lives.

Self-Respect and Political Engagement

In conjunction with exposures to hazardous substances, we need to think about self-respect, and increased community participation in public fora will provide a helpful first step. The social bases of self-respect are implicated in both the ability to engage as a

political agent (the reasonable) and perhaps more noticeably in the capacity to act as a rational agent pursuing a particular concept of the good. Independent of the outcome, increased dialogue between entrepreneurs, governmental representatives, and residents of impacted or potentially impacted communities expresses a respect for all parties who have a stake in the outcomes of decisions, and is a public expression of concern for the health and well-being of all. Importantly, such meetings must present real opportunities for dialogue in which ideas are discussed and taken seriously. In order to view oneself as making a claim on justice, one's claims must be listened to. Specifically, this requires that social or economic status should not impact the ability to participate in civic life, or the degree to which one's claims are taken seriously.³⁶⁹

In order for a public expression of values to have significance, there must also exist some sense that one's participation can influence the outcome. In the past year, activists from CCAEJ were informed, by a person with considerable political power in California, that a decision regarding the future of their community had been made long before the public meeting at which residents spoke and an official vote was taken. It is precisely this sort of circumstance that chips away at the value of political engagement and participation, and this is precisely what needs to be avoided if we seek to guarantee self-respect. While self-respect might still be preserved when residents are unable to reach their goals, the fact that they had an opportunity to impact the outcome of the decision is important.

³⁶⁹ In Rawls's terms, equal rights and liberties, as well as the Fair Value of Equal Political Liberties, must obtain.

The recognition that one's claims to justice are valued by society aids in the pursuit of individual rational projects. When a person has the opportunity to participate in decisions about what happens in her community, there is an implicit expression that her rational projects are worthy of pursuit and protection, insofar as she is publicly acknowledged as a stakeholder. Thus, when a resident of our representative community comes before the city council to talk about the challenges to her children's health posed by the lead acid battery lab, she should be able to see the value she places on their health reflected back to her in the response with which her concerns are met.

Determining precisely how this is to be achieved presents significant challenges, which may exceed the boundaries of what I intend to achieve with this project. However, I think there are some general guides that I can offer at this juncture. To begin, we need to think seriously about what the role of "stakeholder" actually is in public discussions. When addressing environmental hazards, it often seems that there are three players, the government (local, state, federal, etc...), the corporation that is either planning a new facility or already has one in place, and the residents whose lives are or may be impacted by this hazard. This model can be a bit misleading, as it ignores the role of individual residents by viewing them as an aggregate. While this might appear to be something of a crude utilitarian calculation, if the health and welfare of 50,000 residents is at stake in a public debate, these should be given greater weight than the much smaller number of corporate executives who will benefit. This calculation will become much more complex if we seek to include employees and future employees of a facility, but the general aggregative worry may still stand.

Further, residents of EJ communities are not homogeneous, and giving one person the opportunity to speak for large numbers of persons will likely not issues in adequate representation of all. Although we live in a representative democracy, real discourse needs to recognize that there are a wide variety of needs and concerns within a community, and simply approaching debates over environmental hazards as pitting two parties against one another, with government as the intermediary, neglects important nuances in people's views. As CCAEJ activist Jose Velasco told me in 2010, "We don't want to close the source of work. We want to learn to live with the companies, and we want the companies learn how to live with us."³⁷⁰ What he expressed was not a hatred of the railyard, but a recognition of the complex relationship between his community and the facility that both creates job opportunities for his friends and neighbors, while simultaneously putting many persons health at risk. In many respects, what I hear in his words is a plea for recognition as a stakeholder.

Again, if the concerns of wealthier persons or corporate entities appear to be more important or are taken more seriously, this can serve to undermine a person's conception of her own projects as worthy of pursuit.³⁷¹ Part of what is under discussion here is what Rawls terms the Fair Value of Equal Political Liberties, but it is also about the moral powers of both reasonability and rationality, and the capacity of persons to fully develop and act on these powers.

³⁷⁰ Jose Velasco, April 19 2010.

³⁷¹ Meaningful participation in public fora will also serve to prevent the further challenges to self-respect that occur when persons find themselves living in heavily polluted communities while neighboring areas face few of the same concerns. I will return to this later in the chapter.

Precaution, Health, and Respect

With concerns about protecting both health and the power of rationality, a more precautionary approach may serve us well. Crudely, a precautionary approach asks us to assume that exposures will be harmful (either to physical or social health) until proven otherwise. Thus, responsibility for protecting health should fall on the shoulders of those who are either responsible for the creation of hazards or those tasked with protecting public health. This shift is especially important, as responsibility for bringing problems to light has historically rested on the shoulders of those who have already experienced harms. Implementation of such a principle would ensure that the power of rationality is maintained for all, by preventing affronts to that capacity before they occur, instead of responding to them afterwards.

To illustrate, let me return to the community described in chapter 4. Imagine this community before it has reached its current state, and is home to a much smaller number of hazards. When the corporation made the determination to place the plant for producing agricultural chemicals in this area, this would likely have increased exposures by a significant margin.³⁷² A fully health protective precautionary approach would require a comprehensive environmental impact report that acknowledges both the contribution that the new facility will make to contamination in the community as well as existing levels of contamination, by looking at the facilities that are already there, as well as the health of

³⁷² Here, I imagine something not dissimilar to that of South Camden, described in Chapter 2. The concern with such facilities is not the direct exposure to pesticides that might be faced by agricultural workers or persons living near disposal sites, but from the escape of substances like SO₂ during production.

community members.³⁷³ In beginning from the perspective that addition of hazards to such a community will be harmful, the onus of responsibility for protecting health and safety is shifted away from community residents to potential polluters. While such reports are already widely required, it is important that we begin from the perspective that protecting human health is the primary goal. This might require reducing the quantities of substances that are legally allowed, or requiring much more robust studies. The particulars of such endeavors will not be addressed here, but the importance of a precautionary approach cannot be overestimated.

Preventing threats to health and well-being in a proactive way is a means for respecting the importance of developing the powers associated with rationality, and the value of individual rational goals. A precautionary approach is, essentially, a health protective approach that recognizes that it is better to never harm than to harm and repair. Importantly, this approach recognizes that challenges to the moral powers cannot be compensated for by access to other goods, like financial compensation.

As I suggested in chapter 5, the Rawlsian social bases of self-respect should extend beyond the equal basic liberties and Fair Equality of Opportunity. If the experience of living in a heavily impacted community can affect whether one can develop a sense of self-respect, then knowing that one's community will not be used as an unofficial "testing ground" for toxic substances also seems important for developing self-respect. Functionally, a precautionary approach can also be seen to express the

³⁷³ See Chapter 2 for a discussion of the various kinds of exposures that need to be considered in EJ communities. Chapter 4 provides a discussion of the special susceptibilities and vulnerabilities that residents of EJ communities may experience.

publicly recognized value of a person's rational projects, because social institutions will not allow affronts to someone's ability to achieve those projects. While there may appear to be a degree of paternalism in such an approach, protecting health is a way of respecting the value of others' rational pursuits, not a suggestion that persons are incapable of caring for themselves and protecting their own health.³⁷⁴

Freedom and Choice

The final preventative measure involves ensuring freedom of choice (understood in Sen's terms as both well-being and agency freedom), by working to end circumstances where persons and communities are forced to choose between relative poverty and potential harms to health. One of the greatest problems presented by environmental injustices is that the risks people face and the benefits they receive are often incommensurate. The potential good created by an increased tax base or a job cannot fully compensate for the harms that may result from exposures to environmental hazards. This is particularly true for the innocent bystanders, especially children, who have no voice in decisions about the future of their community.

While we are troubled by the fact that such circumstances do not allow for meaningful choice, we should also be troubled that persons are even placed in such positions. Typically, it is poverty that leads people to entertain trade-offs between good health and financial gain, and a truly robust response to environmental injustices should work to ensure that the distributions of wealth and employment aren't such that there is

³⁷⁴ Alternatively, Peter de Marneffe (and others) take the view that certain kinds of paternalism, provided that they are not infantilizing, shouldn't be viewed as objectionable. Thus, while we might be troubled by limitations on our freedom of speech, we are not troubled by speeding limits and similar laws. (Peter de Marneffe, "Avoiding Paternalism," *Philosophy & Public Affairs* 34, no. 1 (2006).)

pressure to make such choices. Community rejuvenation projects designed to develop better opportunities for people and bring in new sources of revenue can make such painful choices unnecessary. For example, the EPA's Brownfields initiative is designed specifically to clean up potentially hazardous sites in communities, so that these can be used for other purposes.³⁷⁵ This can help entice other kinds of business to move into a community, and work to prevent the addition of further hazards. New "green technologies" initiatives may also help greatly in this regard.

Further, there are some forms of enticement that might be less objectionable than simple financial gains. In some circumstances, companies have offered to create social services in communities, in exchange for the placement of new facilities. For example, we can imagine a case where a company offers to provide excellent free medical care for everyone in the community surrounding their new power plant, which might ultimately leave them in better health than they were prior to the installation of the plant. Of course, we may still run up against problems related to self respect, which may suggest that such trade-offs are never beneficial. However, they are worth exploring as a potential means for protecting health.

While it is impossible to cover the full range of potential protective measures, I think that focusing on community involvement, recognizing the importance of factors that can impact both exposures and susceptibility, taking a more precautionary approach, and recognizing the value of choice can capture some of what is most important. In so doing, we can respect the important role that social and political participation play in

³⁷⁵ US Environmental Protection Agency, "Brownfields and Land Revitalization," <http://www.epa.gov/brownfields/>.

ensuring self-respect, and prevent the challenges to health that are at the heart of environmental injustices.

As I outlined in Chapter 4, the various challenges that impacted communities face, including environmental exposures, social problems, and lack of access to important goods, are interrelated in such a way that our approach to them needs to be holistic. It is what I've referred to as the "constellation" of factors, each of which impacts the other, that we must consider in our preventative schemes. Thus, the addition of a new hazard into a community may seem fairly innocuous by itself, but when taken in conjunction with all of the other hazards and social conditions, may issue in outcomes we wouldn't antecedently expect. Part of creating a more health protective means for addressing environmental injustices requires careful scrutiny of the interplay of the many factors that lead to poor agency and well-being outcomes in EJ communities, and it is only with this more comprehensive picture that we can begin to fully address the harms persons in such communities face.

Restorative Measures

Despite our best efforts, there will nearly inevitably be circumstances under which preventative mechanisms have failed, or perhaps did not exist in the first place.³⁷⁶ When harms occur, there must be measures in place that can be responsive, and must be

³⁷⁶ Which is more likely the case in our current framework.

sensitive both to the community and its values.³⁷⁷ I will class the first form of these responses as “restorative”. The goal of restorative efforts is to ensure that individuals who have experienced harms will be able to function as fully as is possible in society and will be as close as possible to a state where they had experienced no harm. In some sense, this is modeled on the procedures of civil or tort law whose goal is to make people whole again.

This relationship to the civil law is important, as in order to hold individuals, agencies, or corporations responsible, there must have been some violation of a legal requirement, either through a regulatory agency’s failure to adequately regulate, or through a corporate body’s failure to meet regulations. This is a legal and not a moral requirement, as we can certainly imagine circumstances where people are deserving of compensation even if no law has been broken. However, it will be very difficult to hold any party responsible if there is no legal infraction. When there are number of polluting facilities are located in a community determining legal responsibility will be especially challenging, but measures for making such determination do not seem impossible to conceptualize.³⁷⁸

Restorative efforts focus on bringing residents of a community as near as possible to the circumstances that would obtain had they not been impacted by the environmental hazards they have faced. There is difficulty in ascertaining what that “pre-harm” level

³⁷⁷ See earlier discussions of Rawls’s “social bases of self-respect” and the general discussion of Sen’s focus on freedom and self-determination.

³⁷⁸ In such cases, it would seem that the agency charged with ensuring the health and safety of the community under discussion would be responsible for harms resulting from a failure to recognize that the number and type of hazards in the community were dangerous.

actually is, but the Senian picture can offer some guidance if we think about the quality of the life of a person or a community in terms of capabilities. While this will require a degree of empirical research into the lives of communities and individuals, I think it necessary that our measures be responsive to people as they actually are.

Well-Being Achievement and Freedom

In earlier chapters, my discussion of Sen focused on his view of well-being in relation to quality of life, and this will take up much of my current discussion as well. For Sen, well-being can be cashed out in terms of one's achievement of certain goals (well-being achievement) and the range of options one has for achieving those goals (well-being freedom). Because Sen's work is "person-centered", it can help us develop a deeper understanding of the circumstances of individual lives and what must be done to improve them.

Well-being achievement focuses on whether people actually achieve a goal like good health, or at least some aspects of normal physical functioning. Cashed out in restorative terms, this means that people who have experienced negative health affects need to be brought to a position of achieving good health, or as close to that goal as can realistically be achieved. One easy place to begin thinking about restoration is in terms of financial compensation. While financial reparations cannot change the past, they can provide people with the means to live fuller lives in the future. Thus, if someone is physically harmed, restorative justice would require that she be provided with the medical supplies required to live a more full and normal life, despite some limitations.

For example, a person in our representative community who has experienced liver failure associated with exposures to chemicals used in pesticide manufacture might be a good candidate to receive a liver transplant, funded by the corporation responsible for her harm. This may not undo all the damage she has experienced (she will be on medication for the rest of her life and may experience other health effects), but may improve her overall health and quality of life. Achieving good health might be incredibly difficult, or even impossible, for someone who has experienced considerable harms, but measures can certainly be taken to achieve some of the health goals that would have been possible without the harm, or at least those generally accepted as valued by that society.

However, our main focus should be well-being freedom, which involves preserving opportunities, and working to increase opportunities for those who have faced harms. Thus, persons in our representative community need to be provided with the means to do and be the widest range of things feasible. This requires providing access to many of the capabilities valued by society as a whole, and by individuals in particular, including the opportunity to work, participate in political life, and experience full social integration.

Further, certain harms that persons experience *in utero* or in the neonatal stage can carry with them health consequences that they will face throughout their lives. Impacts to the immune system are a special source of concern here, as challenges to the immune system early in life leave persons susceptible to “secondary conditions”. For example, childhood asthma, which can result from or be exacerbated by environmental exposures to air pollutants, has been linked to later life problems ranging from increased

respiratory infections to greater chances of developing behavioral disorders and lung cancer.³⁷⁹ This means that our focus needs not to be merely on the current circumstances of a person's life, but on the longer term.

As Sen is careful to note, the quantity of goods a person who has faced health harms will require may be significantly greater than those needed by a more normally-abled person to achieve the exact same functioning. Restorative justice must focus on the quality of life by not simply providing financial resources to those who have been harmed, but by taking seriously the idea that the goals of justice include opportunities and achievements, not merely possessions. Further, it should focus on the whole person over a whole lifetime, recognizing that exposures, particularly those that take place in early development or childhood, can have lasting effects on persons throughout their lives.³⁸⁰

To achieve this, we need to think about what people require to live full lives. This includes some idea of good health, but also a vast number of agency and well-being goals, as well as the freedom to choose from among them. For someone with mobility challenges, this might require ensuring access to a wheelchair to increase her opportunities both to move around, but also to pursue the career of her choosing. If a person develops behavioral or impulse-control problems because of *in utero* or childhood lead exposures, we might be able to ensure more career and other opportunities by

³⁷⁹ Rodney R Dietert and Judith T Zelikoff, "Identifying Patterns of Immune-Related Disease: Use in Disease Prevention and Management," *World Journal of Pediatrics* 6, no. 2 (2010).

³⁸⁰ Further, there are substances like diethylsilbestrol (DES), which was used by pregnant women in the mid-Twentieth Century, but the carcinogenic effects on the female children of women who took the drug did not show up until the children were in their late teens and early 20's. Such cases suggest that when we identify harms that need to be compensated for or addressed, we should take a wide view of the ways that persons can be affected. (Rogers and Kavlock, "Developmental Toxicity," 418.

providing her with medications, and helping her to develop skills for better self-control. For the person with chronic respiratory problems related to PM exposure, we might ensure that she has access to all of the medications she needs (inhalers, antibiotics, etc...), which will allow her to live the “most normal” life possible. The goal of such efforts should be to ensure choice and opportunity, and through doing so, to preserve the ability of persons to act freely and express values.

Relocating Hazards and Persons

Practically speaking, there are other measures that might be taken to further the health goals of impacted communities and the residents of those communities. Perhaps first among these is the removal of risks from the community. While it can be extremely difficult to shut down a factory or remove a storage facility, such things may be required to prevent harms, regardless of their inconvenience. In some cases, it may be possible to change the means or methods utilized by a facility to significantly reduce exposures. For example, a corporation could begin using cleaner-burning fuel in an industrial facility, or change the means by which waste is disposed. While such measures may not actually serve to restore communities in all respects, they can improve the lives of residents in significant ways by both preventing harms and improving overall quality of life.

Alternatively, it might be the residents of the community who will leave. As I noted in chapter 3, relocation is an issue that should be addressed with considerable delicacy. While some residents may be anxious to move away from the dangers that currently surround them, many people have spent long years working to purchase homes, raise families, and develop meaningful relationships with friends and neighbors. Such

individuals are very unlikely to desire relocation, particularly if it is mandatory.³⁸¹ If we take Sen seriously, we should take the freedom to exercise agential control over one's own life to be very important, and it is possible that this may sometimes conflict with well-being, or perceived well-being. Further, real freedom would require that persons be given choices, as even a choice between two less desirable outcomes still allows for the expression of some preference.³⁸²

Hence, solutions need to present individuals with choices, showing clear for the values of those who have faced harms. Examining this requirement with regard to the relocation of residents can be illuminating. If our goal is to achieve better health for residents of our representative community, and it is determined that relocating them is the most effective means for achieving this goal, this should not entail that relocation be offered as the only possibility. It would likely be required that residents of the impacted community be given the resources to move if they so desired, but other opportunities

³⁸¹ Penny Newman, 2009.

Importantly, we might distinguish here between optional and forced relocation efforts. In many cases, allowing people the option of being bought out, for a reasonable level of compensation, might provide them with the tools and the ability to begin anew in a safer and more healthy community, and would thus be desirable for those whose ties to the community, or to a particular home, were not so strong as to make moving an incredibly undesirable outcome. Forcing individuals to leave their homes seems to necessarily deny them control or freedom in their choices, and would thus seem to be impermissible under any circumstances. However, we can envision situations where such forced relocation might be necessary. We might imagine a case where the presence of individuals might impede clean-up, perhaps after a nuclear meltdown, and in such a case, forced relocation of individuals, without their consent, would likely be morally permissible. (And I think we can construct a case for this without necessarily being forced to rely upon utilitarian grounds.)

³⁸² Although the Senian might say that this is unfree in certain respects, it does seem preferable to lacking any choice in the matter.

must also remain available. Barring a very small set of circumstances, forced relocation should be avoided, even in cases where it appears to serve a valuable goal.³⁸³

On this particular point, it seems both Rawls and Sen agree. For Sen, forced relocation fails to meet the requirements of freedom in both its agency and well-being respects, as the individual capacity to form goals and make choices about the means of achieving goals is limited. For Rawls, forced relocation involves a lack of concern for the importance of rational agency, involving the power of individual choosers to make decisions about their own goals, and to follow chosen life projects. This similarity is due, in part, to the fact that both focus much of their concern on the fundamental importance of thinking about persons as essentially instrumental reasoners for whom selecting a goal and determining the best means for achieving that goal is fundamental.

Restoring people requires creative thought and measures that consider the specific qualities of the communities under discussion. EJ communities are diverse, and one-size-fits-all solutions cannot adequately address the wide range of challenges they face. While I've focused on good health, there are a number of other candidates for discussion, ranging from community involvement to self-determination. The type and value of the functionings on which discussions focus will be largely determined by facts about the individuals and communities under discussion. Since this work has focused on

³⁸³ There is an interesting issue here regarding the circumstances under which forced relocation might be deemed an appropriate response. One example that presents interesting concerns for my theory are circumstances where it is clearly in a child's best interest for the family to relocate, but the parents refuse to do so. Under such circumstances, should the parents be forced to relocate? Should Child Protective Services intervene if the harms the child is facing are environmental, and not linked to abusiveness or lack of concern on the part of the parents? In such cases, we might think that the environmental assaults that the children face are not all that different from physical assaults involving fists, but we must also remember that there are many values at play in such circumstances, and that the values motivating the parents to remain may not be selfish or irrational but motivated by care and concern for their children.

circumstances of environmental injustice within the domestic context of the United States, we can assume some shared values, insofar as the people who are the target of our restorative scheme are participants in a liberal democracy where there is a fairly high standard of living (at least in terms of GDP) and some shared norms of social behavior. Hence achieving a certain level of political agency, as laid out by Rawls, is likely valued by all segments of society, though there is certainly disagreement about its importance with reference to other possible values. Likewise, persons may put differing levels of emphasis on goods like family, social involvement, or career achievement, even though they are broadly understood as valuable.

Ultimately, the goal of restorative justice for EJ communities is the creation of circumstances where individuals and communities can achieve a quality of life equivalent to that enjoyed by communities that have not been exposed to the same forms of danger. This requires the freedom and capacity to achieve those basic and higher-level functionings deemed valuable by individual persons, subcultures, and society as a whole.

Mitigative Measures

The final group of measures I will class as mitigations. Unlike restorative efforts, mitigative approaches do not strive to restore persons or communities who have experienced harms,³⁸⁴ but work to lessen the impacts of environmental hazards without making significant changes in emissions or institutional structures. Hence, they are short-term or “stop gap” measures, intended to have positive effect without offering full or

³⁸⁴ Conceived in terms of opportunities, functionings, or capabilities.

long-term solutions. Although not ideal, mitigative strategies play an important role in protecting health, and serve to express the value of the lives and well-being of the residents of impacted communities.

Mitigative strategies should be pursued in circumstances where waiting for the creation and implementation of longer-term measures will lead to high risks in the short term. It can take many years for regulatory law to be enacted, and its passage often requires significant strong scientific data as well as a political climate favorable to more stringent regulation. For example, one of the communities with which I have worked the most closely during my research is West Side San Bernardino, where residents are exposed to extremely high levels of particulate pollution from the railyard and transport vehicles affiliated with that site. The California Air Resources Board, because most railyard activity is pre-empted by federal law, cannot regulate emissions levels for locomotives and other sources.³⁸⁵ In such circumstances, preventative measures have already failed to fully protect health and restorative measures are not available, as they typically require a legal violation that leaves one party responsible for resulting harms. However, given the risks to health, justice seems to require some form of health-protective intervention. This is of the greatest importance for susceptible subpopulations, like children for whom exposures can have devastating long-term impacts.

Mitigative strategies can be further split into two types of measures, involving sources and receptors. Source mitigations are designed to limit emissions at the source,

³⁸⁵ Railroads are considered part of interstate commerce, and are thus governed at the federal level. There is some debate about exactly what the state government is capable of doing in these circumstances. Some community activists believe that CARB is failing to exercise its full power, while CARB has repeatedly stated that they are in a very difficult position vis-à-vis federal regulation.

focusing on preventing toxic substances from traveling to areas where people will be exposed. Receptor mitigations address exposures at the places where people might be exposed, protecting people from facing exposures to substances present in their communities or places of work and study. While each focuses on a different aspect of the problem, both have the goal of preventing harms by reducing exposures without changing overall emission levels or modes of production.

I will first address source mitigations. Such efforts neither redress harms nor greatly improve the circumstances of life in EJ communities, but affect the quantities of potentially harmful substances that reach residents. While there are challenges resulting from proximity to numerous hazards, reducing exposures can do a great deal to further the goal of lessening health impacts. As risk (of harm) is simply a function of exposure, reducing exposure is an easy way to reduce individual risk, and thus cut down on harms. Measures that prevent substances from leaving the premises on which they are produced, or which prevent them from traveling into areas where people can come into contact with them, can thus have a considerable impact on health outcomes.

For example, the installation of air scrubbers on power plants and industries can reduce the quantities of airborne substances these facilities release. Typically, these devices use water to trap particles before they enter the air. Although the pollution is still being produced, and must be disposed of, such efforts will reduce exposures to

surrounding populations, and will potentially prevent exposures to things like heavy metals that can have serious effects on health.³⁸⁶

For mobile sources of pollution, like semi-trucks, waste disposal trucks and other large transportation equipment, there are also a number of mitigative possibilities. Retrofitting vehicles so that they release fewer hazardous substances can make a considerable difference, particularly with non-road vehicles that are not subject to the same standards as roadworthy vehicles. Further, transferring the entrances to railyards and industrial facilities away from residences, or moving truck routes away from residential areas, can lead to a reduction in overall exposures, as those locations that face the highest levels of pollution will not be inhabited by people. While such efforts don't entirely remove the threats created by proximity to hazardous facilities, they can make a dent in the immediate impacts experienced by residents, and aid in the prevention of harms.

The second form are receptor mitigations. Such efforts are intended to address exposures at the receptor, whether it is a residence, school, business, or other site where people are likely to be. While the first set of strategies limits pollution where it is produced, receptor strategies are specifically designed to protect communities and persons. Some pollutants, like particulate matter, can become trapped indoors, resulting in especially high concentrations in indoor air. As our goal is to reduce exposures, we need to think about protecting people both indoors and outdoors.

³⁸⁶ The fact that this water has to be disposed of at some point presents considerable problems, as it is saturated with toxic substances.

For example, we can reduce airborne exposures in our representative community by installing vegetation buffers between facilities and residences. In addition to making areas more attractive, some forms of vegetation can effectively “scrub” the air, removing much of the hazardous material. This has been shown to be effective with particulate pollution from roadways as well.³⁸⁷ Sound barriers can also aid in limiting the noise created by industrial facilities and highways, reducing noise exposures to nearby residents.³⁸⁸

Further, significant benefits can be reaped by residences in areas with high levels of air pollution that are equipped with high quality central air-conditioning systems. In addition to helping people to cool off in the summer heat, air conditioners filter air, thereby removing a significant quantity of airborne pollutants from the air entering residences. Further, better air filtration can limit exposures from items inside residences, as many people in low-income communities are exposed to toxic assaults from fire-retardants and other hazardous substances (including heavy metals) present in older furniture, furnishings, and fixtures.³⁸⁹ Installation of in-home water filtration systems will meet similar goals by removing harmful substances from water before it is ingested or

³⁸⁷ For example, Tiwary et al. (2009) found that in a 100 km square area of London, UK, 2 deaths and 2 hospitalizations could be averted per year by planting trees. (Abhishek Tiwary et al., "An Integrated Tool to Assess the Role of New Planting in Pm10 Capture and the Human Health Benefits: A Case Study in London," *Environmental Pollution*, no. 157 (2009).)

In April 2010, the US EPA convened a meeting to look at the results of vegetation on near-road pollution, and how best to achieve beneficial results. The results were interesting, though not entirely conclusive. (Richard Baldauf et al., "The Role of Vegetation in Mitigating Air Quality Impacts from Traffic Emissions: A Summary of an April 2010 EPA- Sponsored Workwhop," (2011).)

³⁸⁸ However, non-porous barriers may be inefficient for preventing exposures to airborne pollutants.

³⁸⁹ For a discussion of this, see: Zota, Adamkiewicz, and Morello-Frosch, "Are PBDE's an Environmental Equity Concern? Exposure Disparities by Socioeconomic Status."

used for other household purposes. Again, older residences are more likely to have aged plumbing, which can leak heavy metals into the household drinking water, and these can be removed with quality filtration equipment.

A major challenge to the success of mitigative responses is their expense, which is largely borne by residents of impacted communities. While “restorative” measures typically involve one party being found responsible for harms, such is not the case here. Often, the onus may end up being placed on residents to protect themselves. While grant money is sometimes available from both public and private sources, it may not be sufficient. When mitigative measures become necessary, people have likely experienced a degree of injustice (though are perhaps not the victims of a legal wrong), making them deserving of protection. In thinking about future policy, funds could be made available to help low-income people create safer living spaces for themselves, and to ensure that schools and places of work are protected.³⁹⁰ Raising and distributing such funds will of course create some challenges, which I will leave for another time.

Again, we can look to Sen for guidance in implementing mitigative procedures. In essence, what we seek in such efforts is to prevent further challenges to basic functioning. Departures from the basic functionings are problematic, and measures should certainly be taken to prevent persons from losing the opportunity to achieve these basic functionings.

³⁹⁰ For example, there are some incredibly effective technologies available for filtering both air and water inside the home, but they are often extraordinarily expensive. Additionally, the homes in heavily impacted communities are frequently older or not particularly well-made. If a residence is not air-tight, installation of expensive equipment to clean the air might not be especially useful.

If a person's good health is threatened by exposure to heavy metals in her drinking water,³⁹¹ this would constitute such a departure, and should be troubling.

Additionally, we should strive to ensure that people have access to a wide range of capability sets, and that the number and range of these sets is not limited by future exposures. For example, circumstances where an exposure to PM threatens the health of a resident of our representative community's ability to play for her school's soccer team should strike us as problematic. If an exposure limits the opportunities available to a person or group of persons, then we need to do what is in our power to reduce that exposure. Even if someone already has a fairly limited set of capabilities, justice requires that we work to maintain those options she currently has available to her, and prevent them from being further limited by greater or longer-term affronts to her health and well-being.

Given the scarcity of resources available for mitigative efforts, we need means to determine which cases are most dire, and when persons or communities are deserving of external intervention. Certainly, circumstances where the ability to achieve basic functionings is at risk will take highest priority. When, for example, an exposure threatens someone's ability to achieve good health, there is good reason for intervention. However, in the event that there are many circumstances where this functioning is challenged, we will need to look further into the entire range of capability sets people possess to determine for whom the losses associated with exposures will be the most dire.

³⁹¹ As I was writing this, the city of Hinkley, CA is again in the news because of elevated levels of Chromium 6 in the drinking water, thought to be a result of Pacific Gas & Electric's use of this substance in lining cooling towers. This Southern California community was the site for the events portrayed in the Hollywood blockbuster "Erin Brokovich".

Typically, it is those who already have limited opportunities, and who are likely to lose the few opportunities they have, who are most in need of attention. For example, communities like South Camden (described in Chapter 2), or the representative community described in Chapter 4, would be clear candidates for such attention.

Ultimately, mitigative measures do little to address the underlying problems of distribution or the way that environmental hazards are handled by agencies and polluting industries. In a sense, mitigative measures are intended for the worst cases, where the challenges are too substantial for persons and communities to be returned to something approximating a “pre-harm” state. However, if further harms can be prevented, it seems clear that such measures are worth undertaking.

Modeling Environmental Justice

Taken as a whole, these three types of measures offer a fairly comprehensive picture of the necessary approaches for combating environmental injustice in the United States. As I noted in the previous chapter, we need to be attentive to the particular forms of injustice that communities and persons face, and tailor our responses to what makes these communities special. However, some of the challenges that EJ communities face, like poor access to health care and nutritious food, are endemic to many impoverished areas that we would not necessarily class as environmentally impacted. Thus, our responses need also to consider those factors that make communities, and their residents, especially vulnerable to environmental hazards.

By incorporating both pre-emptive and retroactive components into the view, we can work to prevent injustices from occurring and to address those that have already occurred. My goal has been to provide a very general picture of how we might prevent and respond to injustice, using the general idea of justice presented in the previous chapter, and the ideas of justice developed using Rawls and Sen. Ultimately, decisions about what happens inside communities need to be made collectively, and involve all stakeholders on an equal footing. Without such circumstances in place, we really cannot hope to alleviate or prevent environmental injustices.

11. Concluding Remarks

One of the most important lessons I have learned in my study of environmental justice is that those who are actively involved in activist communities fighting environmental injustices, although perhaps lacking a philosophical or theoretical analysis of their circumstances and efforts, know precisely what needs to be done. While I had originally intended this as a project with clear implications for public policy, I have found myself repeatedly struck by my own peculiar place in the debate. As an outsider engaging in philosophical analysis of problems that real people confront on a daily basis, avoiding taking an unreflective and paternalistic attitude toward the subjects of my investigation, both those with whom I've worked, and those about whom I've merely read, has been an important goal. Eluding such a fate takes one along a rather treacherous path, and I hope to have succeeded in my goal.

Ultimately, I think that there are important interventions that philosophers can make in discussions of environmental injustice. What I hope to have accomplished in the preceding pages is both rather meager and somewhat grandiose. While readers of this text may not be familiar with some of the challenges I have outlined, and the responses I have suggested, residents of EJ communities are not so ignorant. In many respects, what I have done is to put into philosophical language facts that many activists who work “on the ground” in impacted communities have known and been acting on for years. Concerns of agency, both within the personal and the civic sphere, are at the heart of the work of many EJ organizations, and the recognition of the interface between concerns of well-

being and agency is potent in the concern that EJ organizations have for political activism, like voting campaigns, that go beyond the bounds of what is directly related to environmental health.

I hope to have done justice to this fact, though it is sometimes a difficult goal to accomplish. I am truly thankful to everyone at CCAEJ who gave me an opportunity to engage in the qualitative empirical research that informs this work. I have endeavored to provide a discussion of the challenges residents of EJ communities face, but also to situate those challenges in the larger discussion of human agency and flourishing. In a sense, my goal has been to offer a sustained philosophical analysis, while recognizing that much of what I hope to say has already been recognized by activists for whom these issues are much more present and potent.

Looking to the Future

While the focus of my dissertation has been environmental injustices existing within the United States, there is a great deal of work yet to be done in discussing and addressing the unequal distributions of environmental hazards at the international level. In the United States, there is considerable data suggesting that those communities with the least social capital to create resistance, and who are most susceptible to insult, bear the greatest burden of environmental hazards, and this is also true in the relationships existing between the Global North and South.³⁹²

³⁹² Terms typically used to denote the industrialized and developed nations of Europe, North America, and Asia (North) from developing nations in Africa, South America, Southeast Asia (South).

Like disadvantaged communities that accept waste facilities in the hope of creating jobs or boosting the tax base, countries with limited resources and few export opportunities may take on the waste produced by wealthier nations. This can range from toxic waste to the more contemporary “e-Waste”. When people in richer countries upgrade to newer computers and household electronics, their old items are often shipped, in bulk, to countries in Africa and parts of Southeast Asia for demolition and disposal. Much of the unusable waste is dumped, and later incinerated, releasing dangerous waste products into the air, including fire retardants like PBDEs.³⁹³ Just as in the domestic case, the challenges arising from such environmental challenges bring up concerns regarding health impacts, but are also important as they illustrate the limited options of groups and persons that lead to choices that may result in harms to health that are made in the hope of achieving financial gains.

Further, the challenges produced by Global Climate Change are likely to rest largely on the shoulders of developing nations, despite the fact that the Global North is largely responsible for the emissions of Green House Gases implicated in these changes. For example, if the sea levels rise 1 meter, as they are projected to by 2100, it is people in low-lying countries who will be most affected. In Bangladesh alone, 20 million people (or more) are likely to be displaced by rising ocean levels. Bangladesh is one of the poorest nations in the world, and both the government and individual citizens will likely not be financially able to address the mass migration in which rising sea levels will result.

³⁹³ For this topic, see: Cahal Milmo, "Dumped in Africa: Britain's Toxic Waste," *The Independent*, February 19 2009., Charles W. Schmidt, "Unfair Trade E-Waste in Africa," *Environmental Health Perspectives* 114, no. 4 (2006)., Rama Lakshmi, "Recycling E-Waste Brings Jobs to Poor--and Health and Environmental Fears," *The Washinton Post*, June 12 2010.

Thus, Bangladesh will face increased food shortages and overcrowding in cities, where lack of access to potable water and high population density will likely result in an increase in communicable disease, which there will be few resources to combat.³⁹⁴

The goal of philosophy is, through philosophical analysis, to allow us to get at the heart of complex matters by scraping away the incidental and determining what is most important. While the challenges that residents of EJ communities face are not always distinct from those encountered by similarly situated communities, they do face special concerns with regard to environmental hazards, making them a special case for justice. In turn, exposures to environmental hazards can exacerbate many of the social and other concerns to which such communities are already subject, either through direct health effects or because of the social and political challenges they create.

Ultimately, environmental injustices are visited on persons who have typically already faced challenges that make them more susceptible to harm, while these harms serve to further exacerbate the challenges they face. Taken together, all of these factors make environmental injustices especially troubling, but it is the fact that they are environmental and linked to particular challenges to health that makes them special. Responses to these concerns must acknowledge this, while also recognizing that many aspects of EJ communities make them more vulnerable to environmental assaults. Any sustained effort to address environmental injustice should take this into consideration.

³⁹⁴ See Lenny Bernstein et al., "Climate Change 2007: Synthesis Report Summary for Policymakers," (Intergovernmental Panel on Climate Change, 2007); Katherine Richardson et al., "Synthesis Report, Climate Change: Global Risks, Challenges, and Decisions," (International Alliance of Research Universities, 2009).

Justice must always require that we work through the complexities to recognize what the core challenges are. And, the goals of justice require that we should always work to ensure that people are better off, even in circumstances where full restoration is impossible.

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