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Addressing Environmental Injustices: A Capability Approach to Rulemaking

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ADDRESSING ENVIRONMENTAL INJUSTICES: A CAPABILITY APPROACH TO RULEMAKING

*Shannon M. Roesler**

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I. INTRODUCTION

The Environmental Protection Agency (“EPA”) has placed social justice on the environmental law and policy agenda. Soon after her appointment as Administrator for the Environmental Protection Agency, Lisa Jackson announced the Agency’s renewed commitment to environmental justice, which she adopted as one of the Agency’s seven priorities under her leadership.¹ What began in the late 1970s as a grassroots movement is now part of the national agenda. Policymakers and scholars have ceased debating whether low-income, minority, and indigenous populations are disproportionately affected by environmental hazards and have begun searching for solutions and formulating approaches. Today, protecting the “environment” means protecting not only pristine national parks and open spaces, but also the places where people “live, work, play, and learn.”² It means thinking about the distributive effects of public policies governing a range of environmental harms and benefits.

The EPA has taken steps in this direction in recent years. It now provides grants at the community and state levels to further environmental justice initiatives that encourage local participation and collaborative problem solving.³ The Agency has also committed \$1 million to fund environmental justice projects in ten “showcase” communities across the nation,⁴ and in 2010, it

* Associate Professor of Law, Oklahoma City University School of Law. I would like to thank the participants in the First Annual Fall Colloquium on Environmental Scholarship at Vermont Law School for their helpful comments on an earlier draft of this Article. I would also like to thank Amanda Perry-Kessarar for her thoughtful comments and the Oklahoma City University School of Law for supporting my work through the provision of a summer research grant.

¹ Lisa P. Jackson, Administrator, EPA, Remarks to the Conference on Environmental Justice, Air Quality, Goods Movement and Green Jobs (Jan. 25, 2010), *available at* <http://yosemite.epa.gov/opa/admpress.nsf/8d49f7ad4bbcf4ef852573590040b7f6/59d30f1c468800d5852576b6006bae3d!OpenDocument> [hereinafter Jackson, Remarks]; *see also* Memorandum from Lisa P. Jackson, Administrator, EPA, to All EPA Employees, *available at* <http://blog.epa.gov/administrator/2010/01/12/seven-priorities-for-epas-future> (discussing EPA’s seven priorities).

² Jackson, Remarks, *supra* note 1. The environmental justice movement has long emphasized the idea that environmental regulation should extend beyond protection of undeveloped open spaces to protect the spaces where people live, work, and play.

³ Environmental Justice Grants and Programs, ENVTL. PROT. AGENCY, <http://www.epa.gov/environmentaljustice/grants/index.html> (last visited Oct. 13, 2011); *see also* ENVTL. PROT. AGENCY, EPA’S ENVIRONMENTAL JUSTICE COLLABORATIVE PROBLEM-SOLVING MODEL (2008), *available at* <http://www.epa.gov/compliance/environmentaljustice/resources/publications/grants/cps-manual-12-27-06.pdf>.

⁴ Environmental Justice Showcase Communities, ENVTL. PROT. AGENCY, <http://www.epa.gov/environmentaljustice/grants/ej-showcase.html> (last visited Oct. 13, 2011). The projects focus on local environmental issues ranging from Brownfield redevelopment and reducing toxic exposure to development of urban agriculture and green jobs. And the EPA has

awarded nearly \$2 million in grants to fund community environmental justice projects through its small grants program.⁵ Moreover, in addition to focusing on specific communities, the Agency is working on addressing environmental justice at all levels of decision making. For example, in March 2010, the EPA co-sponsored a symposium to discuss ways environmental science and decision making could better address social disparities in environmental health.⁶ And in January of this year, the Agency announced a commitment of \$7 million to fund grants supporting research on the cumulative health risks that environmental justice communities experience as a result of exposure to multiple sources of pollution and other stressors.⁷

Although the Agency has recognized the importance of environmental justice at all levels, the academic scholarship on environmental justice has not yet devoted serious attention to the question of how environmental justice concerns can be incorporated into the rulemaking process. Because environmental injustices often occur at the community level, it is not surprising that much of the scholarship focuses on decisions regarding the siting of locally undesirable land uses (“LULUs”), such as landfills and hazardous waste facilities.⁸ Indeed, we might wonder whether concerns regarding environmental justice can be meaningfully addressed at the policymaking level where agency decision making is often informed by complex, quantitative assessments of health and environmental risks, as well as economic analyses of the costs and benefits of proposed rules.

indicated its desire to apply the knowledge gained from these projects to its future efforts to address local environmental problems. *Id.*

⁵ Environmental Justice Small Grants Program, ENVTL. PROT. AGENCY, (Feb. 2011), <http://www.epa.gov/compliance/environmentaljustice/resources/publications/factsheets/fact-sheet-ej-small-grant-01-2011.pdf>.

⁶ See ENVTL. PROT. AGENCY, UPDATE, STRENGTHENING ENVIRONMENTAL JUSTICE RESEARCH AND DECISION MAKING: A SYMPOSIUM ON THE SCIENCE OF DISPROPORTIONATE ENVIRONMENTAL HEALTH IMPACTS (June 28, 2010), available at <http://www.epa.gov/environmentaljustice/multimedia/albums/epa/hundred-day-challenge.pdf>.

⁷ EPA Awards \$7 Million for Cumulative Risk Research, Env't Rep. Online (BNA) No. 42, at 78 (Jan. 14, 2011).

⁸ See, e.g., Eileen Gauna, *LNG Facility Siting and Environmental (In)justice: Is It Time for a National Siting Scheme?*, 2 ENVTL. & ENERGY L. & POL'Y J. 85 (2007); Richard D. Gragg, III et al., *The Location and Community Demographics of Targeted Environmental Hazardous Sites in Florida*, 12 J. LAND USE & ENVTL. L. 1 (1996); Richard J. Lazarus & Stephanie Tai, *Integrating Environmental Justice Into EPA Permitting Authority*, 26 ECOLOGY L.Q. 617 (1999); Matthew B. Leveridge, *Should Environmental Justice Be a National Concern? A Review and Analysis of Environmental Justice Theories and Remedies*, 15 J. NAT. RESOURCES & ENVTL. L. 107 (2000); Bradford C. Mank, *Environmental Justice and Discriminatory Siting: Risk-Based Representation and Equitable Compensation*, 56 OHIO ST. L.J. 329 (1995); Rodolfo Mata, *Hazardous Waste Facilities and Environmental Equity: A Proposed Siting Model*, 13 VA. ENVTL. L.J. 375 (1994).

Consistent with its stated commitment, however, the EPA is considering new possibilities for incorporating environmental justice into its rulemaking.⁹ For example, in response to a Sierra Club petition raising environmental justice concerns, the EPA reconsidered its final rule revising the definition of solid waste (“DSW rule”).¹⁰ To address environmental justice concerns, in January 2010, the EPA published a draft environmental justice methodology for the DSW rule, explaining that it views the eventual environmental justice analysis as a “pilot project” toward developing a “systematic process to incorporate Environmental Justice considerations within EPA’s rulemaking procedures.”¹¹ After completing its environmental justice analysis of the rule, the EPA included a detailed discussion of that analysis in its proposed revisions to the DSW rule in July 2011.¹² In addition, the EPA recently released a draft environmental justice action plan and an interim guidance on incorporating environmental justice concerns into its rulemaking process.¹³

Even though the EPA has recognized the need to incorporate environmental justice concerns into its rulemaking process, it has also acknowledged that there exists little “precedent for how to conduct an Environmental Justice

⁹ According to EPA Administrator Jackson, “[e]nvironmental justice is not an issue we can afford to relegate to the margins. It has to be part of our thinking in every decision we make.” Lisa P. Jackson, Administrator, EPA, Remarks to the National Environmental Justice Advisory Council (July 7, 2009), available at <http://yosemite.epa.gov/opa/admpress.nsf/8d49f7ad4bbcf4ef852573590040b7f6/313ec9a2bc80d677852575fa007b3c42!OpenDocument>. Similar public statements and actions underscore the EPA’s commitment to environmental justice under this Administration. See Federal Interagency Working Group on Environmental Justice, ENVTL. PROT. AGENCY, <http://www.epa.gov/compliance/environmentaljustice/interagency/index.html> (last visited Oct. 13, 2011).

¹⁰ ENVTL. PROT. AGENCY, DRAFT ENVIRONMENTAL JUSTICE METHODOLOGY FOR THE DEFINITION OF SOLID WASTE FINAL RULE (Jan. 13, 2009), available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-RCRA-2009-0315-0002> [hereinafter EPA, DRAFT EJ METHODOLOGY]. The Agency estimated that the rule would exclude 1.5 million tons of recycled hazardous secondary materials from the Resource Conservation and Recovery Act’s (“RCRA’s”) cradle-to-grave regulations for hazardous waste. The Sierra Club argued that the exclusion will disproportionately and adversely affect minority, low-income, and tribal populations. See Letter from Lisa Gollin Evans & Deborah Goldberg, Attorneys for Earthjustice, to Lisa Jackson, Administrator, EPA, 8 (Jan. 29, 2009).

¹¹ EPA, DRAFT EJ METHODOLOGY, *supra* note 10, at 2. In June 2011, the EPA released a draft environmental justice analysis for the DSW rule for public comment. See *Definition of Solid Waste (DSW) Rulemakings for RCRA Hazardous Waste Regulations*, ENVTL. PROT. AGENCY, <http://www.epa.gov/epawaste/hazard/dsw/rulemaking.htm> (last visited Oct. 13, 2011).

¹² Definition of Solid Waste, 76 Fed. Reg. 44,094, 44,103-08 (July 22, 2011) (to be codified at 40 C.F.R. pts. 260, 261, 266).

¹³ ENVTL. PROT. AGENCY, DRAFT PLAN EJ 2014 (July 2010), available at <http://www.epa.gov/environmentaljustice/resources/policy/plan-ej-2014.pdf>; ENVTL. PROT. AGENCY, EPA’S ACTION DEVELOPMENT PROCESS: INTERIM GUIDANCE ON CONSIDERING ENVIRONMENTAL JUSTICE DURING THE DEVELOPMENT OF AN ACTION (July 2010), available at <http://www.epa.gov/environmentaljustice/resources/policy/considering-ej-in-rulemaking-guide-07-2010.pdf> [hereinafter EPA, INTERIM EJ GUIDANCE].

analysis in the context of a national rulemaking.”¹⁴ In light of the EPA’s recent efforts and the renewed political will to integrate environmental justice concerns into national policymaking, the time has come to think seriously about how rulemakers should approach questions of environmental justice. This Article seeks to fill this void by offering an approach to questions of environmental justice that will guide policymakers in developing coherent methodologies and processes for addressing environmental injustices in the rulemaking process.

The Article begins by asking whether environmental justice can find a home in larger theories of political justice. This is an important inquiry because in order to develop coherent environmental justice methodologies and processes, we must first decide what environmental justice means. In other words, before we can develop an approach that incorporates environmental justice into the rulemaking process, we should first locate the principles and concerns central to environmental justice in a larger theoretical and conceptual framework of justice.

To do this, I begin in Part II by investigating whether environmental justice can be grounded in larger theories of political justice and, if so, what effect this theoretical grounding has on how we approach questions of environmental justice. I argue environmental scholarship and decision making often approach questions of distributive justice by focusing on the distribution of things—namely, the geographic distribution of environmental harms and benefits—when we should be focusing on how these environmental harms and benefits affect actual people. To facilitate our understanding of the actual human impacts of environmental policies, I propose that we ground environmental justice in the capability approach to justice, an informational approach to evaluating social inequalities developed by Amartya Sen. Because the capability approach assesses inequalities by focusing on what people can actually do and be (i.e., their well-being), it can tell us what we most need to know: how environmental policies affect the lives of the most vulnerable populations. And by situating environmental justice within the capability approach, we can construct the necessary methodologies for identifying, addressing, and evaluating environmental injustices.

In Part III, I develop the capability approach to environmental justice by discussing the ways in which the relevant information about human impacts can be gathered, focusing especially on the importance of public participation and deliberation in identifying and weighing the negative impacts of environmental practices and policies. Part IV turns to the application of the approach in the context of policy development and evaluation. I explain how the capability approach can help those engaged in environmental justice research understand the reasons that factors, such as race and class, are linked to increased environmental and public health risks. In the second half of Part IV, I explain how the capability approach can improve the analysis of environmental justice during the

¹⁴ EPA, DRAFT EJ METHODOLOGY, *supra* note 10, at 2.

rulemaking process, focusing in particular on what a capability analysis can tell us in comparison to the primary tool used to assess different policy options: a cost-benefit analysis. In the final section, I use the approach to critique the EPA's approach to environmental justice in its recently proposed regulation of coal ash.

II. DEFINING THE JUSTICE IN ENVIRONMENTAL JUSTICE: THEORETICAL FOUNDATIONS

In 1994, President Clinton issued Executive Order 12,898, which instructs every federal agency to integrate environmental justice into its missions "by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."¹⁵ In addition to emphasizing the need for enforcement of health and environmental statutes, the Order emphasizes the importance of public participation and improved research regarding the health and environment of low-income and minority populations.¹⁶ Moreover, both the Order and the accompanying presidential memorandum instruct agencies to consider not only the environmental and health effects, but also the economic and social consequences of strategies developed to further environmental justice.¹⁷

The EPA's definition of environmental justice builds upon the Executive Order's dual concern with the consequences of environmental policies (i.e., the potential for disproportionately high and adverse effects) and the processes by which policies are implemented (i.e., public participation). Under the Agency's definition, environmental justice means the "fair treatment and meaningful

¹⁵ Exec. Order No. 12,898, § 1-101, 59 Fed. Reg. 7629 (Feb. 11, 1994), *as amended* by Exec. Order No. 12,948, 60 Fed. Reg. 6381 (Feb. 1, 1995). The Interagency Working Group on Environmental justice defines "minority" according to membership in the following population groups: "American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic." A "minority population" exists when "(a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis." INTERAGENCY WORKING GROUP ON ENVTL. JUSTICE, GUIDANCE FOR FEDERAL AGENCIES ON KEY TERMS IN EXECUTIVE ORDER 12,898 (1995), *reprinted in* COUNCIL ON ENVTL. QUALITY, EXEC. OFFICE OF THE PRESIDENT, ENVIRONMENTAL JUSTICE: GUIDANCE UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT, app. A, 25 (1997), *available at* <http://ceq.hss.doe.gov/nepa/regs/ej/justice.pdf>.

¹⁶ Exec. Order No. 12,898, §§ 1-103(a), 3-3, 5-5, 59 Fed. Reg. 7630 (Feb. 11, 1994).

¹⁷ The presidential memorandum actually defines environmental effects to include "human health, economic and social effects," which suggests that an agency should consider the economic and social consequences of environmental policies and actions as part of an initial impact analysis rather than simply considering the social and economic consequences of the agency's efforts to address and mitigate disproportionate "environmental" impacts more narrowly defined to mean disproportionate impacts to health. *See* Presidential Memorandum Accompanying Exec. Order No. 12,898 (Feb. 11, 1994), *available at* http://www.epa.gov/compliance/environmentaljustice/resources/policy/clinton_memo_12898.pdf.

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.”¹⁸

Both “fair treatment” and “meaningful involvement” are further defined:

- Fair treatment means that no group of persons should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies.
- Meaningful involvement means that: (1) people have an opportunity to participate in decisions about activities that may affect their environment and/or health; (2) the public’s contribution can influence the regulatory agency’s decision; (3) their concerns will be considered in the decision making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected.¹⁹

The EPA’s definition of “fair treatment” is more than a guarantee of legal justice in the form of due process and equal protection: it addresses distributive concerns central to social justice by promising a just distribution of environmental burdens throughout society.²⁰ The definition of “meaningful involvement” is also quite broad, requiring that public views not only be heard, but also be taken seriously.²¹

In fact, as I explain below, the EPA’s definition of these terms resonates significantly with definitions of and demands for justice within the environmental justice movement,²² suggesting that the EPA’s definition is responsive to the

¹⁸ EPA, DRAFT EJ METHODOLOGY, *supra* note 10, at 1. As the EPA acknowledges in the recently released Interim EJ Guidance, the *legal* authority to address environmental justice issues is based on existing statutes and regulations; the Executive Order cannot confer authority that is not already granted by statute. See EPA, INTERIM EJ GUIDANCE, *supra* note 13, at 5 (noting public-health provisions of the Clean Air Act (“CAA”) and RCRA that provide the EPA with broad discretion to consider health impacts on minority, low-income, and indigenous populations); see also Lazarus & Tai, *supra* note 8, at 625–50 (surveying federal statutory authority for considering environmental justice in permitting).

¹⁹ EPA, DRAFT EJ METHODOLOGY, *supra* note 10, at 1.

²⁰ See, e.g., DAVID MILLER, SOCIAL JUSTICE 22 (1979) (distinguishing between legal justice, which includes criminal punishment and civil compensation in addition to legal procedures associated with due process, and social justice, which concerns the institutional distribution of benefits and burdens among members of society). The EPA’s definition, which clearly contemplates a kind of disparate impact analysis, follows somewhat surprisingly from the phrase “fair treatment,” which by itself, implies a concern with different *treatment*, rather than disparate effects.

²¹ EPA, DRAFT EJ METHODOLOGY, *supra* note 10, at 1.

²² See *infra* Part II.C.3.

movement's concerns and therefore a solid foundation on which to build a more complete and structured theory of environmental justice that can guide agency decision making at the national level. But to understand what "fair treatment" means and what it requires, we must first ground it in a theory of justice. To do this, I begin with a discussion of the empirical evidence underlying claims of environmental injustice. I then ask whether we can situate these claims within a larger theory of justice. I argue that although Rawls's theory of justice may appear to speak to these injustices, upon further analysis, it proves to be an unworkable foundation for and approach to environmental justice. Because the capability approach to justice focuses on real-world consequences and human lives, it is the optimal approach to environmental justice in policymaking.

A. *The Distribution of Environmental Bads and Goods: Empirical Evidence*

The commitment that some groups not bear a disproportionate share of negative environmental impacts is a commitment to a fair *result*: the equal distribution of environmental goods and bads. That is, the focus is on the outcome; it is not enough to say that environmental hazards are distributed impartially pursuant to a fair process because fairness is also judged by the end result. Given this focus, we might conclude that environmental justice is fundamentally about fairness, or equity, in the distribution of social goods, namely environmental burdens and benefits.

Indeed, questions of distribution dominate the academic literature on environmental justice, which has been motivated, especially in the movement's early years, by a desire to establish empirically that low-income and minority communities are actually inequitably burdened by environmental hazards.²³ And the early studies did, in fact, demonstrate this correlation, especially with respect to race. The seminal study, conducted by the General Accounting Office ("GAO," now the Government Accountability Office) was prompted by a non-violent protest against the siting of a polychlorinated biphenyl ("PCB") landfill in Warren County, North Carolina, a county with a large African American population. The GAO concluded that although only one-fifth of the southern region's population are African American, three of the four major offsite hazardous waste facilities in the southern region were located in predominantly African American communities.²⁴ Research by professor-activist Robert Bullard demonstrated similar racial disparities in the siting of solid waste disposal facilities.

²³ See DAVID SCHLOSBERG, *DEFINING ENVIRONMENTAL JUSTICE: THEORIES, MOVEMENTS, AND NATURE* 55 (2007) (noting that "the most often cited and most obvious, evidence of environmental injustice is in the realm of distribution—specifically the inequitable share of environmental ills that poor communities and communities of color live with").

²⁴ U.S. GEN. ACCOUNTING OFFICE, *SITING OF HAZARDOUS WASTE LANDFILLS AND THEIR CORRELATION WITH RACIAL AND ECONOMIC STATUS OF SURROUNDING COMMUNITIES* 83–168 (1983).

ties in Houston,²⁵ and in 1987, the United Church of Christ's Commission for Racial Justice published a study of the relationship between race and the location of hazardous waste facilities that concluded that race was strongly correlated with the location of these facilities throughout the nation.²⁶

Since these early studies, scores of academic studies have documented disparities in the distribution of environmental goods and bads according to race and class.²⁷ In addition to demonstrating the unequal distribution of LULUs, such as waste disposal facilities (landfills and incinerators), these studies document the extent to which particular communities are exposed to disproportionate risks and effects as a result of air, water, and land pollution. For example, African American children and children from poor families are more likely to have elevated blood lead levels.²⁸ Farm workers, the overwhelming majority of whom are people of color, are disproportionately exposed to the 1.2 billion pounds of pesticides that U.S. farmers use each year.²⁹ Native American populations and other communities that consume greater quantities of fish than the general population are disproportionately exposed to harmful contaminants, such as dioxin and methylmercury.³⁰ Minority and poor communities are also

²⁵ Bullard's research established that out of Houston's five-hundred neighborhoods, nine predominantly African American neighborhoods bear the burden for waste disposal in the form of incinerators and landfills. Robert D. Bullard, *Neighborhoods Zoned for Garbage*, in *THE QUEST FOR ENVIRONMENTAL JUSTICE: HUMAN RIGHTS AND THE POLITICS OF POLLUTION* 49 (Robert D. Bullard ed., 2005); see also ROBERT D. BULLARD, *DUMPING IN DIXIE: RACE, CLASS & ENVIRONMENTAL QUALITY* (3d. ed. 2000).

²⁶ COMM'N FOR RACIAL JUSTICE, UNITED CHURCH OF CHRIST, *TOXIC WASTES AND RACE IN THE UNITED STATES: A NATIONAL REPORT ON RACIAL AND SOCIO-ECONOMIC CHARACTERISTICS OF COMMUNITIES WITH HAZARDOUS WASTE SITES* (1987) [hereinafter *TOXIC WASTES AND RACE*].

²⁷ See SCHLOSBERG, *supra* note 23, at 56. The historical event often cited as the spark for the class-based, antitoxics movement for environmental justice is the Love Canal event. See *id.* at 47. In 1978, residents of Love Canal, a suburb near Niagara Falls, realized they were living on top of a toxic waste site where millions of pounds of hazardous chemicals had been dumped between 1947 and 1952. See CRAIG COLLINS, *TOXIC LOOPHOLES: FAILURES AND FUTURE PROSPECTS FOR ENVIRONMENTAL LAW* 80–81 (2010).

²⁸ CLIFFORD RECHTSCHAFFEN, EILEEN GAUNA, & CATHERINE A. O'NEILL, *ENVIRONMENTAL JUSTICE: LAW, POLICY & REGULATION* 46 (2d ed. 2009) (citing a study that found that "children from poor families are twice as likely to have elevated blood levels than those from higher income families, and African American children are three to thirteen times more likely . . . to have elevated levels); see also Glenn S. Johnson, *Environmental Justice: A Brief History and Overview*, in *ENVIRONMENTAL JUSTICE IN THE NEW MILLENNIUM: GLOBAL PERSPECTIVES ON RACE, ETHNICITY, AND HUMAN RIGHTS* 17, 23 (Filomina Chioma Steady ed., 2009) (noting that survey data published in 1994 indicated that African American children were "lead poisoned at more than twice the rate of non-Hispanic white children at every income level").

²⁹ Ivette Perfecto & Baldemar Velasquez, *Farm Workers: Among the Least Protected*, 18 ENVTL. PROT. AGENCY J. 13 (1992).

³⁰ Catherine A. O'Neill, *Environmental Justice in the Tribal Context: A Madness to EPA's Method*, 38 ENVTL. L. 495 (2008); Catherine A. O'Neill, *Variable Justice: Environmental Standards, Contaminated Fish, and "Acceptable" Risk to Native Peoples*, 19 STAN. ENVTL. L.J. 3 (2000) [hereinafter O'Neill, *Variable Justice*].

disproportionately affected by the environmental harms caused by disasters, such as Hurricane Katrina and the recent Deepwater Horizon oil spill.³¹ Studies also document the unequal distribution of environmental “goods,” such as public transportation and green spaces,³² as well as the unequal application and enforcement of environmental laws.³³

Although some scholars have questioned the methodology of these studies,³⁴ these critiques often challenge the idea that disparities are the result of *intentional* racial discrimination, rather than the empirical conclusion that disparities exist.³⁵ And even those that challenge empirical claims that racial disparities exist are simply few in number compared to studies that document disparities.³⁶ In any event, the EPA and other governmental entities³⁷ have ac-

³¹ See MANUEL PASTOR ET. AL., *IN THE WAKE OF THE STORM: ENVIRONMENT, DISASTER, AND RACE AFTER KATRINA* (2006). Tragically, some of the *same* communities are suffering the effects of both disasters. For example, the Atakapa-Ishak people, a small tribe in Grand Bayou, Louisiana, who depend on the coastal waters for food, livelihood, and recreation, await the impacts of the oil disaster even as they continue to recover from Katrina’s devastation. John Burnett, *Oil Imperils Native American Town, and Way of Life*, NPR ALL THINGS CONSIDERED (June 17, 2010), <http://www.npr.org/templates/story/story.php?storyId=127902879&ft=1&f=1003>.

³² See Robert D. Bullard et al., *The Routes of American Apartheid*, F. FOR APPLIED RES. & PUB. POL’Y 66 (2000); Jennifer Wolch et al., *Parks and Park Funding in Los Angeles: An Equity-Mapping Analysis*, 26 URB. GEOGRAPHY 4 (2005).

³³ Marianne Lavelle & Marcia Coyle, *Unequal Protection*, NAT’L L.J. S1 (1992) (noting the “racial divide in the way the U.S. government cleans up toxic waste sites and punishes polluters”).

³⁴ Much of the debate involves quantitative studies of the siting of hazardous waste facilities. Results of large studies regarding siting depend on the chosen geographic unit of analysis. Compare TOXIC WASTES AND RACE, *supra* note 26 (finding racial disparities using zip code areas), with Douglas L. Anderton et al., *Environmental Equity: The Demographics of Dumping*, 31 DEMOGRAPHY 229 (1994) (finding no racial disparities in siting of treatment, storage, and disposal facilities (“TSDFs”) using census tracts). See also Vicki Been, *Analyzing Evidence of Environmental Justice*, 11 J. LAND USE & ENVTL. L. 1, 20 (1995) (analyzing methodologies in studies of the siting of hazardous waste facilities conducted by the Social and Demographic Research Institute and the UCC Commission); Vicki Been & Francis Gupta, *Coming to the Nuisance or Going to the Barrios? A Longitudinal Analysis of Environmental Justice Claims*, 24 ECOLOGY L.Q. 1 (1997) (finding that race is a predictor of the presence of a TSDF, but poverty is not); Paul Mohai & Robin Saha, *Racial Inequality in the Distribution of Hazardous Waste: A National-Level Reassessment*, 54 SOC. PROBS. 343 (2007) (finding racial and income disparities in the location of TSDFs using “distance-based methods”).

³⁵ See, e.g., Vicki Been, *Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics?*, 103 YALE L.J. 1383 (1994) (theorizing that disproportionate distribution of LULUs may result from market forces that cause individuals with less income to migrate to neighborhoods with LULUs because of cheaper housing). Compare Bullard, *supra* note 25 (arguing that City of Houston pursued an intentionally discriminatory policy—PIBBY (Put it in Blacks’ Backyard)—for waste disposal sites), with Been, *Analyzing Evidence of Environmental Justice*, *supra* note 34, at 20 (concluding that “environmental injustice is not a simplistic PIBBY—‘put it in Black’s backyards,’” but is likely “a much more ambiguous and complicated entanglement of class, race, educational attainment, occupational patterns, relationships between the metropolitan areas and rural or non-metropolitan cities, and possibly market dynamics”).

³⁶ There are too many studies documenting the inequitable distribution of environmental hazards to list here. For example, a recent study found that African Americans were significantly

knowledged the strength of the empirical evidence and have repeatedly expressed a clear commitment to addressing environmental injustice. The relevant question now is *how* to address environmental injustice. To answer this question, we must first define environmental justice by situating it within a larger theory of justice. Given the focus in the literature on the unequal distribution of environmental hazards and benefits, I turn now to the question of whether environmental justice can be grounded in a theory of distributive justice and, if so, which theory provides the best foundation.

B. *Theorizing Fair Distribution*

As the previous section demonstrates, the environmental justice literature is predominantly concerned with distribution, particularly with demonstrating that environmental hazards are disproportionately located in communities of color and poorer communities. As David Schlosberg explains, “from this perspective, environmental inequality occurs when the costs of environmental risk, and the benefits of good environmental policy, are not shared across the demographic and geographic spectrums.”³⁸ In this respect, environmental justice reflects what many political theorists understand to be the fundamental (and per-

more likely to live within a mile of an industrial pollution facility. Paul Mohai et al., *Racial and Socioeconomic Disparities in Residential Proximity to Polluting Industrial Facilities: Evidence From the Americans' Changing Lives Study*, 99 AM. J. PUB. HEALTH S649 (2009), available at <http://www.greatlakeslaw.org/files/mohai-ej-article.pdf>. For other examples, see

ROBERT D. BULLARD ET AL., *TOXIC WASTES AND RACE AT TWENTY: 1987–2007* (2007), available at <http://www.ucc.org/assets/pdfs/toxic20.pdf>; ENVTL. PROT. AGENCY, *FACTORS FOR IDENTIFYING AND ASSESSING DISPROPORTIONATE ENVIRONMENTAL HEALTH IMPACTS 2 n.5* (2007) (listing studies); Paul Mohai & Bunyan Bryant, *Environmental Racism: Reviewing the Evidence*, in *RACE AND THE INCIDENCE OF ENVIRONMENTAL HAZARDS: A TIME FOR DISCOURSE* 163 (Bunyan Bryant & Paul Mohai eds., 1992) (finding race and income to be related to pollution exposure); ENVTL. PROT. AGENCY, *ENVIRONMENTAL EQUITY: REDUCING RISK FOR ALL COMMUNITIES* (1992) (concluding that low-income and minority populations are disproportionately exposed to certain environmental hazards, but insufficient data exists to determine whether these populations suffer disparate health impacts). In addition, numerous qualitative case studies describe environmental injustice in context. See, e.g., *ENVIRONMENTAL JUSTICE IN THE NEW MILLENNIUM: GLOBAL PERSPECTIVES ON RACE, ETHNICITY, AND HUMAN RIGHTS* (Filomina Chioma Steady ed., 2009) (containing case studies from various countries, including the United States); *THE QUEST FOR ENVIRONMENTAL JUSTICE: HUMAN RIGHTS AND THE POLITICS OF POLLUTION* (Robert D. Bullard ed., 2005) (containing case studies from a range of places, including Louisiana's “Cancer Alley,” Los Angeles, the New Jersey waterfront, and South Africa, and focusing on the struggles of various communities, including African American, Native, and Chicano communities).

³⁷ See, e.g., Robert W. Collin, *Environmental Justice in Oregon: It's the Law*, 38 ENVTL. L. 413 (2008) (discussing state-level environmental justice initiatives in Oregon).

³⁸ SCHLOSBERG, *supra* note 23, at 56; see also KRISTIN SHRADER-FRECHETTE, *ENVIRONMENTAL JUSTICE: CREATING EQUALITY, RECLAIMING DEMOCRACY* 24 (2005) (“Distributive justice is essential to the search for environmental justice because it requires a fair or equitable distribution of society's technological and environmental risks and impacts.”).

haps sole) subject of justice: the fair distribution of burdens and benefits in society.³⁹

A *fair* distribution of environmental bads and goods arguably requires the *equal* distribution of these burdens and benefits.⁴⁰ Theories of distributive justice recognize, however, that inequalities invariably exist in the distribution of social goods and are permissible if morally justified. The justifications for these inequalities exemplify the central differences in distributive theories. Amartya Sen illustrates these differences with a story about three children and a flute.⁴¹ One child justifies her claim to the flute because she is the only one of the three who can play and would therefore receive the most pleasure from owning the flute.⁴² Another child claims the flute on the ground that he is impoverished and has no toys of his own; the flute would therefore increase his happiness and his share of economic goods.⁴³ The third child demands the flute because she actually made the flute; she therefore has a right to the flute because it is the product of her own labor.⁴⁴ How we resolve the question of which child receives the flute will likely depend on whether we favor utilitarian, economic egalitarian, or libertarian conceptions of justice.⁴⁵

These differing conceptions of justice are notoriously difficult to reconcile. Claims regarding environmental justice, however, are most analogous to the claim that the second child makes; that is, environmental equality is premised on a commitment to egalitarianism in some form. When we ask how to address the inequalities in environmental distribution, we are not concerned with maximizing the utility (pleasure or some other measure of well-being) of the overall community as in the case of utilitarianism because the maximization of overall utility may actually come at the expense of those most vulnerable.⁴⁶ Similarly, in privileging individual entitlements and property rights, libertarianism

³⁹ SCHLOSBERG, *supra* note 23, at 12; JOHN RAWLS, JUSTICE AS FAIRNESS: A RESTATEMENT 59 (Erin Kelly ed., 2001) (“The two principles of justice assess the basic structure according to how it regulates [distributes] citizens’ share of primary goods”) [hereinafter RAWLS, JUSTICE AS FAIRNESS]; JEAN HAMPTON, POLITICAL PHILOSOPHY 122 (Westview Press 1997) (noting that distributive justice “has been the most dominant part of political theory since the late 1960s”).

⁴⁰ In other words, fairness requires what Aristotle termed an “equal share for equal people.” For Aristotle, distributive justice and the fairness it entails require an “equal share for equal people” of anything that can be divided (e.g., honors, wealth) among members of a political community. ARISTOTLE, NICOMACHEAN ETHICS § 5.43 (Terence Irwin trans., 1985).

⁴¹ AMARTYA SEN, THE IDEA OF JUSTICE 12–14 (2009) [hereinafter SEN, IDEA OF JUSTICE].

⁴² *Id.* at 13.

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ See JEREMY BENTHAM, AN INTRODUCTION TO THE PRINCIPLES OF MORALS AND LEGISLATION xxxiii, xlvi (J.H. Burns & H.L.A. Hart eds., 1982) (explaining that although “in the calculation of what will maximize aggregate welfare men are to be treated as equals in the sense that the same weight is to be given to their equal pleasures or pains whoever they are, the outcome of such calculations may be grossly unequal”).

tolerates inequitable distributions of social goods and does not require equal distribution of environmental resources (although some versions require those who appropriate these resources to compensate others whose use is precluded).⁴⁷ If we are committed to equal distribution of environmental goods and bads, we are espousing an egalitarian view.

Of course, egalitarian views of justice vary as well, and most accept that some inequalities are nonetheless fair, although they differ in the distributive principles that determine what is fair, or “morally relevant.” For example, Aristotle would give the flute to the child who can play because she can best realize the flute’s purpose.⁴⁸ That is, fair distribution turns on the nature of what is being distributed such that the distribution “fits a person’s worth” (e.g., the best flutes to the best flute players).⁴⁹ Ronald Dworkin’s “resource egalitarianism” would require that individuals be given roughly equal means so that they have an equal opportunity to spend in acquiring the resources they desire, thereby ensuring that inequalities are a product of people’s voluntary choices.⁵⁰ It is difficult to see, however, how either theory could provide a useful approach to analyzing the inequitable outcomes of environmental policies. Certain people do not *deserve* a greater share of environmental benefits, such as clean air and water, in an Aristotelian sense; in this case, strict equality is required. But simply committing ourselves to strict equality does not tell us how to measure and address existing inequalities and therefore provides insufficient guidance for policymaking. Resource egalitarianism may require a redistribution of income or wealth in order to compensate for unequal distribution, but like libertarianism, it is less useful in addressing the distribution of public goods, such as public policies that prevent and control pollution.⁵¹

This is perhaps why John Rawls’s theory of justice (and especially his second principle of justice, the difference principle) is the distributive theory most often cited and explored by environmental justice scholars.⁵² According to Rawls, social and economic inequalities are just only if they are attached to po-

⁴⁷ I am thinking here, for example, of Robert Nozick’s use of the Lockean proviso whereby those who appropriate natural resources compensate others so that they are not in a worse position than if the resources had not been appropriated. *See, e.g.,* ROBERT NOZICK, *ANARCHY, STATE AND UTOPIA* (1974).

⁴⁸ ARISTOTLE, *PHYSICS* bk. II, at 351–52 (W.D. Ross ed., Oxford Univ. Press rev. ed., 1998).

⁴⁹ ARISTOTLE, *supra* note 40, § 5.42.

⁵⁰ RONALD DWORKIN, *SOVEREIGN VIRTUE: THE THEORY AND PRACTICE OF EQUALITY* 70 (2000). Through various policies, for example taxation policies, the government can attempt to give individuals the equal shares that allow them to pursue their goals. *See id.* at 99–108.

⁵¹ *Id.* at 65 (explaining that equality of resources is concerned with equality in privately owned resources and does not address questions regarding publicly or commonly owned resources).

⁵² *See, e.g.,* Kristen Engel, *Reconsidering the National Market in Solid Waste: Trade-offs in Equity, Efficiency, Environmental Protection, and State Autonomy*, 73 N.C. L. REV. 1481, 1541–43 (1995); Alice Kaswan, *Distributive Justice and the Environment*, 81 N.C. L. REV. 1031, 1064 (2003); Giancarlo Panagia, *Tot Capita Tot Sententiae: An Extension or Misapplication of Rawlsian Justice*, 110 PENN ST. L. REV. 283 (2005).

sitions and offices equally open to everyone (the fair equality of opportunity principle) and are to the greatest benefit of the least advantaged (the difference principle).⁵³ The relevant inequalities assessed according to the difference principle are “differences in citizens’ reasonable expectations of primary goods [including income and wealth] over a complete life.”⁵⁴ The primary goods of income and wealth may include entitlements, such as health care, as well as public goods, such as environmental policies ensuring the clean air and water necessary for public health.⁵⁵

Because the difference principle requires policies that benefit the least-advantaged members of society as much as possible and the conception of “primary goods” includes public goods, such as environmental policies, Rawls’s theory seems to provide a means to both identify environmental injustice and remedy it. But as we will see, the difference principle cannot help policymakers address existing inequalities in the absence of “background procedural justice,”⁵⁶ and the concept of primary goods does not necessarily provide all the relevant information policymakers need to assess the impact of environmental policies on vulnerable communities. Moreover, the difference principle and primary-goods concept of environmental goods do not fully capture the understanding of environmental justice as it is articulated by different strains of the environmental justice movement. I address all three concerns in the sections that follow.

1. The Background Conditions for Application of the Difference Principle

In his well-known theory of justice as fairness, John Rawls asserts that the following two principles of justice could be accepted by free and equal citizens as the terms of a fair system of social cooperation, that is, as governing the basic structure of society:⁵⁷

(a) Each person has the same inalienable claim to a fully adequate scheme of equal basic liberties, which scheme is compatible with the same scheme of liberties for all; and

(b) Social and economic inequalities are to satisfy two conditions: first, they are to be attached to office and positions open to all under conditions of fair equality of opportunity [the fair

⁵³ RAWLS, JUSTICE AS FAIRNESS, *supra* note 39, at 42–43.

⁵⁴ *Id.* at 59.

⁵⁵ *Id.* at 172; John Rawls, *Fairness to Goodness*, 84 PHIL. REV. 536, 540–42 (1975).

⁵⁶ RAWLS, JUSTICE AS FAIRNESS, *supra* note 39, at 51.

⁵⁷ The basic structure refers to a society’s main political and social institutions, including the structure of the economy and the family, and the way in which they fit together in a system of social cooperation. *Id.* at 10.

equality of opportunity principle]; and second, they are to be to the greatest benefit of the least-advantaged members of society (the difference principle).⁵⁸

Rawls assigns a strict ordering to these principles: the first principle has lexical priority over the second, and within the second principle, fair equality of opportunity has priority over the difference principle. Consequently, the difference principle may be applied only if the other principles are satisfied. It is a principle of distribution that functions only “within the setting of background institutions that secure the basic equal liberties . . . as well as fair equality of opportunity.”⁵⁹

Thus, the difference principle may be meaningfully applied only if all citizens enjoy equal basic liberties, which Rawls specifies with a rather extensive list: “freedom of thought and liberty of conscience; political liberties . . . and freedom of association, as well as the rights and liberties specified by the liberty and integrity (physical and psychological) of the person; and finally, the rights and liberties covered by the rule of law.”⁶⁰ In addition, the condition of fair equality of opportunity must be satisfied, meaning that all citizens, regardless of social class, have a fair opportunity to succeed (in attaining public offices and social positions).⁶¹ Provided these conditions are met, the difference principle may be applied to ensure a just distribution of social goods, namely a distribution in which inequalities work to the advantage of everyone and especially benefit the least-advantaged members of society.⁶²

But without these conditions, the difference principle is not a workable distributive principle for law- and policy-making.⁶³ Rawls explains that an effective system of cooperation “always gives a greater return to the less advantaged for any given return to the more advantaged.”⁶⁴ So, how would the difference principle help address the inequalities in a system of cooperation that resembles that of the United States—in which the more advantaged enjoy a much greater share than the less advantaged?⁶⁵ Rawls’s response is that this system

⁵⁸ *Id.* at 42–43.

⁵⁹ *Id.* at 43.

⁶⁰ *Id.* at 44.

⁶¹ *Id.* at 43–44.

⁶² As Rawls explains, although the first principle applies to constitutional essentials, the difference principle applies at the legislative stage and “bears on all kinds of social and economic legislation.” *Id.* at 48. This would, of course, include environmental legislation and its attendant regulation.

⁶³ *Id.* at 67.

⁶⁴ *Id.* at 63.

⁶⁵ The significant disparity in wealth distribution in the United States is well documented, and the gap has only grown in recent years. See Thomas Piketty & Emmanuel Saez, *Income Inequality in the United States, 1913–1998*, 118 Q.J. ECON. 1, 31 (2003) (noting that “[m]any studies have documented the increase in inequality in the United States since the 1970s”); see also Emmanuel

would not occur in a society that has the background institutions establishing the basic liberties and fair equality of opportunity, as required by the other principles.⁶⁶ These conditions ensure the open competition necessary to keep the ratio between the more and less advantaged within a just range.⁶⁷ But a society with these background institutions is an ideal society, far removed from the social and political realities that exist today.

Furthermore, in real-world societies that lack the background conditions, the logic of the difference principle is easily manipulated to support environmental injustices. In her study of environmental justice, Kristin Shrader-Frechette identifies two related economic arguments that seek to justify environmental inequalities as benefiting everyone, especially the least advantaged: (1) to the extent environmental inequalities promote economic growth, this will ensure the disadvantaged have a decent standard of living;⁶⁸ and (2) this economic growth will reduce inequalities in wealth and income over time.⁶⁹ We might add to this the economic argument that increases in wealth and income benefit the poor more than the rich because marginal increases in wealth are more valuable to the poor. As Shrader-Frechette notes, these arguments have

Saez, *Striking It Richer: The Evolution of Top Incomes in the United States (Update with 2007 Estimates)* (Aug. 5, 2009), available at <http://elsa.berkeley.edu/~saez/saez-USstopincomes-2007.pdf> (noting that “in the economic expansion of 2002–2007, the top 1 percent captured two thirds of income growth”).

⁶⁶ This is also the reason Rawls does not address racial and gender discrimination; in an ideal society with basic liberties and fair equality of opportunity, such discrimination would not exist. RAWLS, *JUSTICE AS FAIRNESS*, *supra* note 39, at 65–66.

⁶⁷ *Id.* at 67. Rawls’s discussion is based on the “simplest” form of the difference principle, whereby we identify the “least advantaged” as “those who share with other citizens the basic equal liberties and fair opportunities but have the least income and wealth.” *Id.* at 65. Of course, unlike wealth and income, inequalities in the distribution of environmental goods are not morally relevant or justifiable in the same way—that is, on the grounds of individual desert or as social incentives to some other end. We can comfortably demand strict equality in the distribution of environmental goods and bads. In fact, in an ideal society with Rawls’s background procedural justice, we would have little need to apply the difference principle to environmental policies; the background institutions would theoretically ensure their fair distribution.

⁶⁸ SHRADER-FRECHETTE, *supra* note 38, at 30–31. In fact, some have made the rather startling argument that environmental regulation is deadly because it decreases wealth, which is tied to health and longevity. Rena Steinzor has highlighted the dubious assumptions underlying these claims. RENA I. STEINZOR, *MOTHER EARTH AND UNCLE SAM: HOW POLLUTION AND HOLLOW GOVERNMENT HURT OUR KIDS* 168 (2008); see also David M. Driesen, *Distributing the Costs of Environmental, Health, and Safety Protection: The Feasibility Principle, Cost-Benefit Analysis, and Regulatory Reform*, 32 B.C. ENVTL. AFF. L. REV. 1, 57 (2005) (explaining that “marginal differences in income have little effect upon health” and noting that “environmental regulation, even costly regulation, does not necessarily diminish wealth”). Longevity may be affected by income levels, but other variables matter as well. See SEN, *IDEA OF JUSTICE*, *supra* note 41, at 226–27 (“Freedom from premature mortality is, of course, by and large helped by having a higher income (that is not in dispute), but it also depends on many other features, particularly of social organization, including healthcare, the assurance of medical care, the nature of schooling and education, the extent of social cohesion and harmony, and so on.”).

⁶⁹ SHRADER-FRECHETTE, *supra* note 38, at 30–31.

serious problems. First, it is not clear that environmental regulation inhibits economic growth.⁷⁰ Second, it is far from clear that the less advantaged will benefit from economic growth should growth occur.⁷¹

The most important point from the standpoint of environmental justice is that by characterizing the distributive question as one of relative benefit, we achieve little and often end up justifying the status quo. In the context of environmental regulation, pollution-control standards technically benefit everyone, including the least advantaged. Indeed, in promulgating health-based ambient air quality standards for ozone, the EPA concluded that its new standards will benefit everyone, including minority and low-income populations: “EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it increases the level of environmental protection for all affected populations”⁷² In other words, because the rule strengthens environmental protection for all, there is simply no environmental justice issue: everyone wins.⁷³ If this is the approach to environmental justice in rulemaking, environmental justice concerns will have no bearing on national health-based standards, as long as standards stay the same or improve.

This logic can infect permit decisions as well. The well-known *Select Steel* decision⁷⁴ is a good example. *Select Steel* is a rare administrative resolution on the merits of a complaint based on the EPA’s regulations under Title VI, which prohibits discrimination by entities that receive federal funding.⁷⁵ The

⁷⁰ *Id.* at 31.

⁷¹ *Id.*

⁷² National Ambient Air Quality Standards for Ozone, 73 Fed. Reg. 16, 436, 16,507 (Mar. 27, 2008) (codified at 40 C.F.R. pts. 50, 58). In 2010, the EPA reconsidered the ozone standards and proposed new standards more protective of human health. See EPA, National Ambient Air Quality Standards for Ozone, 75 Fed. Reg. 2938 (Jan. 19, 2010) (codified at 40 C.F.R. pts. 50, 58). The environmental justice analysis in the proposed rule is the same, however. *Id.* at 3040 (concluding that the “proposed rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it increases the level of environmental protection for all affected populations”).

⁷³ The EPA has reached this conclusion in its analysis of the impact of other CAA rules. See, e.g., Wendy E. Wagner, *The CAIR RIA: Advocacy Dressed Up as Policy Analysis*, in REFORMING REGULATORY IMPACT ANALYSIS 56, 61, 69 (Winston Harrington et al. eds., 2009); Catherine A. O’Neill, *The Mathematics of Mercury*, in REFORMING REGULATORY IMPACT ANALYSIS, *supra*, at 123–25 [hereinafter O’Neill, *The Mathematics of Mercury*].

⁷⁴ See Letter from Anne E. Goode, Director, EPA Office of Civil Rights, to Father Phil Schmitter & Sister Joanne Chiaverini, Co-Directors, St. Francis Prayer Center, & Russell Harding, Director, Michigan Department of Environmental Quality (Oct. 30, 1998) [hereinafter *Select Steel* letter].

⁷⁵ Civil Rights Act of 1964 §§ 601–02, 42 U.S.C. § 2000d (2006). In 2003, more than 100 Title VI complaints had been filed with the EPA’s Office of Civil Rights over the course of ten years, but only fourteen or so had been decided on the merits, and they were decided in favor of the regulatory agency engaging in the allegedly discriminatory conduct. See Eileen Gauna & Sheila Foster, *Environmental Justice: Stakes, Stakeholders, Strategies*, HUM. RTS., Fall 2003, at 4–5.

EPA's regulations prohibit not only intentional discrimination, but also discriminatory effects (i.e., adverse disparate impacts).⁷⁶ The complainants alleged that the Michigan Department of Environmental Quality ("MDEQ") was violating Title VI regulations because the issuance of a PSD (prevention of significant deterioration) permit for the proposed Select Steel facility would have discriminatory effects.⁷⁷ The EPA's decision that the MDEQ did not violate Title VI or the EPA's implementing regulations turned in large part on its conclusion that Select Steel's potential emissions would not cause the area to violate health-based standards, including national ambient air quality standards ("NAAQS") for ozone and lead under the Clean Air Act ("CAA").⁷⁸ The EPA reasoned that because health-based standards are "presumptively sufficient" to protect everyone's health within an adequate margin of safety, no population would suffer adverse impacts from the increased emissions, and if no one suffers an adverse impact, then no one suffers a discriminatory effect.⁷⁹ This underlying logic—that environmental regulation is to the benefit of all—serves only to sustain the status quo of environmental inequalities and fails to address *existing* disparities.⁸⁰

⁷⁶ 40 C.F.R. § 7.35(b). The case was decided under EPA's Interim Guidance for Investigating Title VI Administrative Complaints Challenging Permits. In 2000, the EPA replaced the Interim Guidance with two draft guidances, including one governing the investigation of complaints. *See* Draft Title VI Guidance for EPA Assistance Recipients Administering Environmental Permitting Programs and Draft Revised Guidance for Investigating Title VI Administrative Complaints Challenging Permits, 65 Fed. Reg. 39,649 (June 27, 2000) [hereinafter Title VI Draft Guidance].

⁷⁷ OFFICE OF CIVIL RIGHTS, ENVTL. PROT. AGENCY, INVESTIGATIVE REPORT FOR TITLE VI ADMINISTRATIVE COMPLAINT (SELECT STEEL COMPLAINT) 1, *available at* http://www.epa.gov/ocr/docs/ssdec_ir.pdf.

⁷⁸ *See Select Steel* letter, *supra* note 74, at 3–5.

⁷⁹ *Id.* at 3. This reasoning is consistent with the analysis set out in the Title IV Draft Guidance, which provides that compliance with the health-based national ambient air quality standards ("NAAQS") establishes a rebuttable presumption: "if an investigation includes an allegation raising air quality concerns regarding a pollutant regulated pursuant to a primary NAAQS, and where the area in question is attaining that standard, the air quality in the surrounding community will generally be considered presumptively protective and emissions of that pollutant should not be viewed as 'adverse' within the meaning of Title VI." Title VI Draft Guidance, 65 Fed. Reg. at 39,680. The Draft Guidance has been widely criticized. *See, e.g.,* Alex Geisinger, *Rethinking Environmental Justice Regulation: A Modest Proposal for Penalty Return*, 55 SYRACUSE L. REV. 33, 43 (2004) (noting that the guidance has been criticized because it establishes burdensome standards and procedures that make a disparate impact finding unlikely); Bradford C. Mank, *The Draft Title VI Recipient and Revised Investigation Guidances: Too Much Discretion for EPA and a More Difficult Standard for Complainants?*, 30 ENVTL. L. REP. 11,144 (2000) (criticizing the guidances for failing to establish clear standards and discussing objections raised by environmental justice advocates).

⁸⁰ In addition, health-based standards may be inadequate for all populations. *See, e.g.,* W. Lawrence Beeson et al., *Long-Term Concentrations of Ambient Air Pollutants and Incident Lung Cancer in California Adults: Results from the AHSMOG Study*, 106 ENVTL. HEALTH PERSP. 813 (1998) (finding that study participants had an increased risk of cancer from ozone and other airborne pollutants from exposures at or below the EPA's health-based standards).

2. Primary Goods: Is This All We Need to Know?

Even if we could guarantee background procedural justice, the difference principle would fail to address environmental injustice because it does not tell us everything we need to know to choose among social policies. Rawls explains that the difference principle is a principle of social choice requiring comparisons:

To say that inequalities in income or wealth are to be arranged for the greatest benefit of the least advantaged simply means that we are to compare schemes of cooperation by seeing how well off the least advantaged are under each scheme, and then to select the scheme under which the least advantaged are better off than they are under any other scheme.⁸¹

To choose among environmental policies, we would therefore assess each policy according to how it regulates citizens' shares of primary goods, including public goods, such as pollution-control measures, and choose the policy that benefits the least advantaged the most.⁸² But in focusing solely on the goods being distributed, rather than on people's diverse and varying needs, we gather only part of the information we need to make policy decisions.

The primary goods approach suffers from an information deficit because it glosses over important variations among groups of people due to both intrinsic and acquired characteristics.⁸³ Intrinsic differences resulting from genetic factors, as well as age, gender, and race, will determine the level of advantage a person enjoys from an environmental measure.⁸⁴ For example, children and the elderly are more vulnerable than other populations to the effects of certain air pollutants, and people who have sickle-cell anemia are more vulnerable to the effects of carbon monoxide.⁸⁵ Acquired differences resulting from the differences in people's lived experiences—for example, in their ability to access adequate health care and proper nutrition—similarly affect their level of advantage with respect to environmental goods and exacerbate the burdens imposed by environmental bads.⁸⁶ Such deprivations are too often a reality in low-income and minority communities, making them more susceptible to the risks

⁸¹ RAWLS, *JUSTICE AS FAIRNESS*, *supra* note 39, at 59–60.

⁸² *Id.* at 172.

⁸³ Carl F. Cranor, *Risk Assessment, Susceptible Subpopulations, and Environmental Justice*, in *THE LAW OF ENVIRONMENTAL JUSTICE: THEORIES AND PROCEDURES TO ADDRESS DISPROPORTIONATE RISKS* 341, 344 (Michael B. Gerrard & Sheila Foster eds., 2d ed. 2008); Robert R. Kuehn, *The Environmental Justice Implications of Quantitative Risk Assessment*, 1996 U. ILL. L. REV. 103 (1996).

⁸⁴ Cranor, *supra* note 83, at 344.

⁸⁵ *Id.*

⁸⁶ *Id.* at 345.

and negative effects of environmental hazards. In addition to increased susceptibility, these communities are also subject to greater exposures through multiple sources of pollution.⁸⁷

As Amartya Sen has argued, the failure to account for human diversity results from the use of primary goods as the metric by which to measure social advantage. By not attending to the diversity in people's characteristics and social conditions, a focus on primary goods obscures the ways in which people convert these goods into actual opportunities.⁸⁸ In focusing on the *means* of living, we miss, according to Sen, what matters most: whether individuals have the opportunity to achieve particular *ends*, such as good health and fitness.⁸⁹ For example, a person may have a high income, but she may have difficulty converting the income (the means of living) into the ends she has reason to value because of a persistent illness or physical disability.⁹⁰ If we evaluate inequalities using social goods or resources as a measure, we will not see how this person is disadvantaged and will fail to take this social inequality into account when making political decisions.⁹¹

Environmental decision making reflects this reductive vision of the individual when it sets standards based on the "average" person, ignoring differences in susceptibility and exposure across communities.⁹² Catherine O'Neill has, for example, criticized the fish consumption rate of 6.5 grams per day, which the EPA has used to set water quality standards that regulate levels of harmful contaminants, such as mercury, PCBs, and dioxins.⁹³ Because it is based on studies of the general population, this consumption rate does not reflect consumption by particular populations, such as subsistence fishers and some Native American populations.⁹⁴ Similarly, as noted above, the EPA's en-

⁸⁷ *Id.*

⁸⁸ SEN, IDEA OF JUSTICE, *supra* note 41, at 261.

⁸⁹ *Id.* at 233–34.

⁹⁰ *Id.*

⁹¹ As Sen explains in his well-known lecture *Equality of What?*, a person in a wheelchair requires more social resources than an able-bodied person, and yet, the difference principle would not result in that person's receiving more or less on the grounds of the disability. Amartya Sen, *Equality of What?*, in AMARTYA SEN, CHOICE, WELFARE AND MEASUREMENT 353, 365 (1982) [hereinafter Sen, *Equality of What*]. Martha Nussbaum extends this critique, arguing that Rawls's focus on income and wealth suggests that social inequalities can be addressed simply by distributing more of these resources. But even if we give the person in the wheelchair more money so she may hire others to assist her, we will not have guaranteed her adequate access to public spaces, "a public task, which requires public planning and a public use of resources." MARTHA C. NUSSBAUM, FRONTIERS OF JUSTICE: DISABILITY, NATIONALITY, SPECIES MEMBERSHIP 168 (2006). Similarly, in focusing on income and wealth as means to address environmental injustice, we will not guarantee those especially burdened by environmental hazards a healthier environment—which is also a public task requiring public planning and public use of resources.

⁹² Cranor, *supra* note 83, at 363–64.

⁹³ O'Neill, *Variable Justice*, *supra* note 30, at 43–44.

⁹⁴ *Id.* at 54. The EPA has since revised the fish consumption rate to 17.5 grams per day for the general population and 142.4 grams per day for subsistence fishers, but states have been slow to

vironmental justice analysis for its 2008 revision to the NAAQS governing ozone does not reflect agency consideration of the needs of members of low-income and minority communities who may be exposed to multiple sources of air pollution.⁹⁵ Of course, by focusing on the good being distributed (in this case, improved air quality), rather than the affected communities, the rule may technically be of greater benefit to the least advantaged, provided the least advantaged live in areas with the poorest air quality.⁹⁶ But this analysis does not tell us whether and to what extent the rule will actually improve the lives of the least advantaged; relevant information is missing from the analysis.

Furthermore, in the context of permitting decisions at the local level, a focus on what is being distributed (e.g., a hazardous waste facility or an underground injection well) also tends to circumscribe the information decision makers consider. Decisions issued by the Environmental Appeals Board (“EAB”) resolving environmental justice challenges to permit decisions illustrate this tendency.⁹⁷ In these decisions, adverse environmental impacts are tied, as Shei-

revise their water quality standards according to the new rates. See OFFICE OF WATER, ENVTL. PROT. AGENCY, GUIDANCE FOR ASSESSING CHEMICAL CONTAMINANT DATA FOR USE IN FISH ADVISORIES: VOLUME 2 RISK ASSESSMENT AND FISH CONSUMPTION LIMITS 1-8-1-10 (3d ed. 2000), available at http://water.epa.gov/scitech/swguidance/fishshellfish/techguidance/risk/upload/2009_04_23_fish_advice_volume2_v2cover.pdf.

⁹⁵ See U.S. GOV’T ACCOUNTABILITY OFFICE, ENVIRONMENTAL JUSTICE: EPA SHOULD DEVOTE MORE ATTENTION TO ENVIRONMENTAL JUSTICE WHEN DEVELOPING CLEAN AIR RULES 17-18 (2005), available at <http://www.gao.gov/new.items/d05289.pdf>. Even when CAA rules would arguably result in adverse impacts to environmental justice communities, the EPA has downplayed these impacts and relied on optimistic assumptions to dismiss environmental justice concerns. For example, in analyzing the impacts of a rule designed to control emissions for new motor vehicles, the EPA estimated that the rule could result in net increases in emissions of nitrogen oxides and volatile organic compounds, which lead to higher levels of ozone, in twenty-six of eighty-six counties. But despite this finding, the EPA concluded that the benefits of the rule would outweigh the increases in the “vast majority” of relevant communities. *Id.* (citing AIR & RADIATION, ENVTL. PROT. AGENCY, TIER 2 MOTOR VEHICLE EMISSIONS STANDARDS AND GASOLINE SULFUR CONTROL REQUIREMENTS: RESPONSE TO COMMENTS 20-22 (1999), available at <http://www.epa.gov/tier2/frm/rtc/tr2-rtc.pdf>). In responding to the GAO’s investigation of the EPA’s environmental justice analysis of three CAA rules, the EPA expressed the view that the permitting process, rather than the rulemaking process, would best address environmental justice concerns. *Id.* at 19. But as the following discussion in the text indicates, permit decisions do not gather all the necessary information about the consequences of the proposed activities.

⁹⁶ Nathaniel O. Keohane, *The Technocratic and Democratic Functions of the CAIR Regulatory Analysis*, in REFORMING REGULATORY IMPACT ANALYSIS, *supra* note 73, at 33, 41 (“Air quality improvements may disproportionately benefit low-income households, to the extent that they are concentrated in urban areas or in places with poor initial air quality.”); see also O’Neill, *The Mathematics of Mercury*, *supra* note 73, at 124-25 (noting that the least advantaged may be viewed as “net gainers” only by ignoring existing disparities in distribution and adopting the status quo as the relevant baseline).

⁹⁷ See Sheila R. Foster, *Meeting the Environmental Justice Challenge: Evolving Norms in Environmental Decisionmaking*, 30 ENVTL. L. REP. 10,992 (2000) (discussing the EAB’s resolution of eight decisions between 1995 and 2000). Although the EAB has held that permitting entities have authority under federal environmental statutes, such as the CAA, the Safe Drinking

la Foster has noted, “to the particular environmental media regulated by the statute at issue.”⁹⁸ For example, “an impact assessment for permits issued pursuant to the UIC [Underground Injection Control] regulations in the SDWA [Safe Drinking Water Act] must focus exclusively on identifying and addressing disproportionate impacts to a vulnerable community’s drinking water.”⁹⁹ Moreover, in one of the EAB’s most well-known decisions analyzing an environmental justice challenge, the EAB concluded that although the permitting region had the authority under the Resource Conservation and Recovery Act (“RCRA”) to consider disproportionate impacts to low-income or minority communities, it “would not have discretion to redress impacts that are unrelated or only tenuously related to human health and the environment, such as disproportionate impacts on the economic well-being of a minority or low-income community.”¹⁰⁰

But, as environmental justice scholars and advocates have long emphasized, the direct impacts of a particular activity understood within the context of a particular statute (e.g., in conjunction with the NAAQS under the Clean Air Act (“CAA”)) are only part of the story. Even health-based standards, such as the NAAQS, that supposedly protect public health are not always based on analyses of many of the health risks of greatest concern to vulnerable communities—such as risks of respiratory, reproductive, and immune damage.¹⁰¹ They also do not necessarily address localized “hot spots,” areas where air pollution is concentrated due to multiple pollution sources, because the localized pollution may not affect the larger area measured for compliance with ambient standards.¹⁰² The health effects of a given activity, such as emissions from a power plant, will depend on the characteristics of the local population (e.g., existing rates of respiratory illness) and the larger environment (e.g., the cumulative effects of multiple sources of pollution and the synergistic effects of multiple

Water Act (“SDWA”), and the Resource Conservation and Recovery Act (“RCRA”), to consider environmental justice concerns, it has yet to reject a permit on these grounds. *Id.* at 10,993; ENVIRONMENTAL JUSTICE: LAW, POLICY & REGULATION, *supra* note 28, at 258. Of course, given the EAB’s abuse-of-discretion standard of review, it is unlikely to reject a permit on grounds that are within a permitting entity’s discretion.

⁹⁸ Foster, *supra* note 97, at 11,004.

⁹⁹ *Id.* Foster is referring here to an EAB decision, in which the EAB held that the permitting region had no authority to “redress impacts unrelated to the protection of underground sources of drinking water, such as alleged negative economic impacts on the community, diminution in property values, or alleged proliferation of local undesirable land uses.” *Id.* (quoting *In re Envotech, L.P.*, 6 E.A.D. 260, 282 (EAB 1996)). Similarly, in *In re Ecoeléctrica, L.P.*, the EAB declined to review a permit decision on environmental justice grounds when the permitting region concluded that a proposed plant would not have an adverse impact because the maximum emissions from the plant would be below the NAAQS. *In re Ecoeléctrica, L.P.*, 7 E.A.D. 56, 68 (EAB 1997).

¹⁰⁰ *In re Chem. Waste Mgmt. of Ind., Inc.*, 6 E.A.D. 66, 75 (EAB 1995).

¹⁰¹ Kuehn, *supra* note 83, at 127.

¹⁰² Foster, *supra* note 97, at 11,003.

chemicals or “stressors”).¹⁰³ Moreover, a given activity might have a range of other physical and psychological effects if the activity results in various nuisances, such as odor or noise and vibrations from increased truck traffic, or if it affects surrounding property values.¹⁰⁴ These effects will also depend on how people perceive the relevant risks, and communities will perceive and weigh risks differently.¹⁰⁵ Thus, to assess whether a particular environmental rule or policy is fair, we need an approach to justice that focuses on human lives, not just the environmental good or bad being distributed.

C. *The Capabilities Perspective*

Economist Amartya Sen and others have developed just such an approach, a system for evaluating social inequalities that focuses on human lives, rather than on social goods or resources.¹⁰⁶ The capability approach assesses individuals’ quality of life (i.e., their well-being) according to the opportunities, or “capabilities,” individuals have to do and be the things they have reason to value.¹⁰⁷ Sen calls these states of “doing and being”—for example, being well-

¹⁰³ *Id.* at 10,998. In *South Camden Citizens in Action v. N.J. Dep’t of Env’tl. Prot.*, the district court directed the permitting entity to conduct a Title VI disparate impact analysis that would consider cumulative effects and the community’s vulnerability to greater risks based on local health data. 145 F. Supp. 2d 446 (D.N.J.), *modified*, 145 F. Supp. 2d 505 (D.N.J. 2001), *rev’d*, 274 F.3d 771 (3d Cir. 2001). Unfortunately, the Third Circuit eventually reversed the district court’s order. *S. Camden Citizens in Action v. N.J. Dep’t of Env’tl. Prot.*, 274 F.3d 771, 791 (3d Cir. 2001). The fate of the case turned in part on the U.S. Supreme Court’s holding in *Alexander v. Sandoval* that individuals may not sue under Title VI to enforce Title VI discriminatory effect regulations. *Id.* at 777–78 (discussing *Alexander v. Sandoval*, 532 U.S. 275 (2001)). The Third Circuit rejected the district court’s theory that the plaintiffs could nevertheless enforce the Title VI regulations under 42 U.S.C. § 1983. *Id.* at 790–791. Whether § 1983 is a means of enforcement in other jurisdictions remains an open question. Without the option of enforcing Title VI disparate-impact regulations, plaintiffs have the onerous burden of proving *intentional* discrimination under either Title VI or the Equal Protection Clause. *See Sandoval*, 532 U.S. at 280–81. Regardless of their theory of discrimination, plaintiffs bringing environmental justice challenges in courts have not enjoyed much success. *See generally* John Martinez & Michael Libonati, 3 LOCAL GOV’T LAW § 16.65 n.4 (2010) (noting that “suits premised on environmental justice have been almost uniformly unsuccessful” and listing cases); Carlton Waterhouse, *Abandon All Hope Ye That Enter? Equal Protection, Title VI, and the Divine Comedy of Environmental Justice*, 20 FORDHAM ENVTL. L. REV. 51, 57–102 (2009) (discussing attempts to use civil rights laws to remedy environmental injustice and reasons these attempts have failed).

¹⁰⁴ Foster, *supra* note 97, at 11,003–04. Foster notes two EAB cases in which the permitting region evaluated these kinds of effects, but expresses concern that this practice may remain limited because permitting entities are not required to consider these impacts. *Id.* at 11,004.

¹⁰⁵ *Id.* at 11,002.

¹⁰⁶ Amartya Sen, *Capability and Well-Being*, in THE QUALITY OF LIFE 30, 31 (Martha C. Nussbaum & Amartya Sen eds., 1993) [hereinafter Sen, *Capability and Well-Being*].

¹⁰⁷ *Id.* at 31. I should emphasize that Sen’s capability approach is technically best understood as a system of social evaluation, *see, e.g.*, S.R. Osmani, *The Sen System of Social Evaluation*, in 1 ARGUMENTS FOR A BETTER WORLD: ESSAYS IN HONOR OF AMARTYA SEN 15, 15 (Kaushik Basu & Ravi Kanbur eds., 2009), or as an “approach to justice,” SEN, IDEA OF JUSTICE, *supra* note 40, at 1.

nourished, being in good health, or taking part in the community—“functionings.”¹⁰⁸ The capability approach judges social advantages and disadvantages in terms of people’s capabilities to achieve the various functionings that they have reason to value.¹⁰⁹ The approach has been highly influential in the fields of human development and human rights,¹¹⁰ informing the scholarship in this area and shaping empirical measures of poverty and development, including the indexes of human development and human poverty produced by the United Nations Development Programme.¹¹¹ In addition to its many applications within the social sciences and economics,¹¹² academics have begun exploring the approach’s contribution to law and policy questions in the areas of property,¹¹³ health,¹¹⁴ sustainability,¹¹⁵ and corporate social responsibility.¹¹⁶

Sen’s capability approach provides the ideal framework for analyzing environmental justice concerns because it can be used both to evaluate existing policies and to develop proposals for social change. It also does not suffer from the shortfalls of the difference principle because it is concerned with real-world consequences and alternatives, rather than ideal institutions, and it focuses on what people can actually do and be as a result of environmental decisions, rather

See generally Ingrid Robeyns, *Justice as Fairness and the Capability Approach*, in 1 ARGUMENTS FOR A BETTER WORLD, *supra*, at 397, 403 (noting that the capability approach is not a theory of justice, but is instead a “general framework for specifying a space for the interpersonal comparison of individual well-being, and can be developed into a wide range of capability theories”).

¹⁰⁸ Sen, *Capability and Well-Being*, *supra* note 106, at 31.

¹⁰⁹ *Id.* (“Functionings represent parts of the state of a person—in particular the various things he or she manages to do or be in leading a life. The *capability* of a person reflects the alternative combinations or functionings the person can achieve, and from which he or she can choose one collection.”).

¹¹⁰ *See, e.g.*, 2 ARGUMENTS FOR A BETTER WORLD: ESSAYS IN HONOR OF AMARTYA SEN 4 (Kaushik Basu & Ravi Kanbur eds., 2009) (collecting essays on capabilities and human development); MARTHA C. NUSSBAUM, WOMEN AND HUMAN DEVELOPMENT: THE CAPABILITIES APPROACH (2000); AMARTYA SEN, DEVELOPMENT AS FREEDOM (2000)

¹¹¹ *See* KEVIN WARKINS, THE HUMAN DEV. REPORT OFFICE, HUMAN DEVELOPMENT REPORT 356, 356–357 (2007/2008), *available at* http://hdr.undp.org/en/media/HDR_20072008_EN_Complete.pdf.

¹¹² *See, e.g.*, 2 ARGUMENTS FOR A BETTER WORLD, *supra* note 110, at 4 (collecting essays from a range of disciplines, including political science, sociology, history, and economics).

¹¹³ *See, e.g.*, Margaret Chon, *Intellectual Property and the Development Divide*, 27 CARDOZO L. REV. 2821, 2874–78 (2006); James J. Kelly, Jr., *Land Trusts That Conserve Communities*, 59 DEPAUL L. REV. 69, 72, 91–96 (2009); Jedediah Purdy, *A Freedom-Promoting Approach to Property: A Renewed Tradition for New Debates*, 72 U. CHI. L. REV. 1237, 1258–63 (2005).

¹¹⁴ *See, e.g.*, JENNIFER PRAH RUGER, HEALTH AND SOCIAL JUSTICE 45–130 (2010); Jennifer Prah Ruger, *Health, Capability, and Justice: Toward a New Paradigm of Health Ethics, Policy and Law*, 15 CORNELL J.L. & PUB. POL’Y 403, 435–440 (2006).

¹¹⁵ *See, e.g.*, Nancy D. Perkins, *Livability, Regional Equity, and Capability: Closing in on Sustainable Land Use*, 37 U. BALT. L. REV. 157, 158–160, 188–192, 195–202 (2008).

¹¹⁶ *See* Cynthia A. Williams, *Corporate Social Responsibility in an Era of Economic Globalization*, 35 U.C. DAVIS L. REV. 705, 710 (2002).

than on the geographic distribution of environmental goods and bads. In the following sections, I elaborate on these distinctions and conclude with a discussion of how the capability approach best captures the vision of environmental justice as it is articulated by both the EPA and the environmental justice movement.

1. A Real-World Approach: Focusing on Human Lives

A theoretical framework for addressing environmental injustice must begin with the world as it is, namely a world that lacks perfectly just social structures and institutions. The relevant inquiry is whether our legal rules and institutions promote environmental justice by addressing existing disparities, rather than whether they simply avoid exacerbating existing inequities. Even if a stricter environmental standard is likely to benefit everyone, it may do little to close the gap between the least and most advantaged and it does not necessarily guarantee an adequate level of protection for all.

By way of example, consider the way the EPA justified the total maximum daily load (“TMDL”) for dioxin challenged in *Dioxin/Organochlorine Center v. Longview Fibre Co.*¹¹⁷ After finding that levels of dioxin in the Columbia River violated state water quality standards, three states asked the EPA to issue the required TMDL, which would establish the maximum amount of dioxin permitted from all combined sources.¹¹⁸ The EPA determined the ambient concentration of dioxin that would result from the TMDL and the corresponding level that would accumulate in the tissue of fish.¹¹⁹ To determine the risk to human health from consumption of the fish, the EPA used the national average total consumption rate of 6.5 grams per day and concluded that the average risk satisfied the risk level of one in a million mandated by state water quality standards.¹²⁰ Environmental groups challenged the TMDL in part because the EPA did not consider the risk that this level of dioxin would pose to certain subpopulations that consume greater amounts of fish—a risk estimated to be 23 in a million.¹²¹ Even though the EPA had “acknowledge[d] that continuing scientific studies may indicate that subpopulations are not adequately protected by the TMDL,” the Ninth Circuit nevertheless upheld the EPA’s decision.¹²² The court noted that this increased risk is “within levels historically approved by the EPA and upheld by courts” and that the EPA reasonably interpreted “the one-in-a-million risk level mandated by the state water quality stan-

¹¹⁷ *Dixon/Organochlorine Ctr. v. Longview Fibre Co.*, 57 F.3d 1517, 1517 (9th Cir. 1995).

¹¹⁸ *Id.* at 1520.

¹¹⁹ *Id.* at 1523.

¹²⁰ *Id.* at 1524.

¹²¹ *Id.*

¹²² *Id.*

dards for the general population” to “allow for lower yet adequate protection of specific subpopulations.”¹²³

The EPA’s interpretation of the state standards in this case is not one that promotes environmental justice. Such an approach ignores actual lives, relying instead on theoretical averages and an underlying policy choice that requires people to adjust their behavior (i.e., eat less fish) in order to avoid higher exposures.¹²⁴ The justness of the standard, however, cannot be judged in hypothetical terms, but must instead be assessed according to the social consequences that follow. As Sen emphasizes, “[w]hat really happens to people cannot but be a central concern of a theory of justice.”¹²⁵ Furthermore, aside from whether indigenous populations and subsistence fishers can practically consume less fish, decreased consumption may restrict some groups from engaging in cultural and religious traditions,¹²⁶ just as asking some communities to avoid the risks of ozone exposure on days with “ozone alerts” may restrict people’s opportunities for outdoor recreation, community engagement, and income-generating work.

In sum, the justice of a particular environmental rule or standard cannot be assessed apart from people’s actual lives. A capability-based approach to environmental decision making ensures that we assess the justice of these rules by focusing on how they restrict or enhance the opportunities people actually have to do and be the things they have reason to value. As Sen conceptualizes it, the capability approach is concerned not only with what people achieve (“culmination outcomes”), but also with the freedom people have to determine their lives (“comprehensive outcomes”):¹²⁷ “In assessing our lives, we have reason to be interested not only in the kind of lives we manage to lead, but also in the freedom that we actually have to choose between different styles and ways of living.”¹²⁸ For example, a person who voluntarily fasts and a person who does not eat because of famine are similarly deprived of food, but they do not enjoy the same freedom.¹²⁹ Similarly, a person who must avoid a health risk by not eating fish in accordance with religious or cultural traditions may enjoy less freedom than a person who simply eats very little fish. And even if we distribute environmental goods (e.g., cleaner water) and bads (e.g., LULUs) equally across

¹²³ *Dixon/Organochlorine Ctr.*, 57 F.3d at 1524.

¹²⁴ See Catherine A. O’Neill, *No Mud Pies: Risk Avoidance as Risk Regulation*, 31 VT. L. REV. 273, 274, 344 (2007) (discussing and critiquing the increased use of risk avoidance as a regulatory tool) [hereinafter O’Neill, *Risk Avoidance*].

¹²⁵ SEN, IDEA OF JUSTICE, *supra* note 41, at 68.

¹²⁶ O’Neill, *Variable Justice*, *supra* note 30, at 15–16, 86.

¹²⁷ See SEN, IDEA OF JUSTICE, *supra* note 41, at 215–17 (discussing the distinctions between “culmination outcomes” and “comprehensive outcomes”).

¹²⁸ *Id.* at 227; see also Osmani, *supra* note 107, at 29 (noting that Sen describes his approach as consequence-sensitive or consequence-based rather than consequentialist because it incorporates this element of choice).

¹²⁹ SEN, IDEA OF JUSTICE, *supra* note 41, at 237.

the population, we cannot assess the justice of the rules of distribution without asking how they affect actual lives. As I explain in the next section, the capability approach's informational focus does just that.

2. Gathering the Relevant Information: Capabilities and Functionings

In his well-known Tanner Lecture *Equality of What?*, Sen underscores the ways in which conventional metrics used to measure social advantage, namely utility and primary goods, fail to provide the information we need to evaluate social inequalities.¹³⁰ As discussed above, if we focus only on social goods or resources, we fail to see what these goods do for people. Sen's oft-cited example of someone in a wheelchair illustrates this point: provided the person has the same resources or goods as others, the difference principle will not give her more even if she requires more, for example, to be mobile.¹³¹ The critique applies not simply to cases of serious deprivation, but more generally. By focusing on the "things" to be distributed, we ignore human diversity:

If people were basically very similar, then an index of primary goods might be quite a good way of judging advantage. But, in fact, people seem to have very different needs varying with health, longevity, climatic conditions, location, work conditions, temperament, and even body size (affecting food and clothing requirements). So what is involved is not merely ignoring a few hard cases, but overlooking very widespread and real differences. Judging advantage purely in terms of primary goods leads to a partially blind morality.¹³²

Indeed, as we have already seen, environmental standards and decisions often reflect this partially blind morality by ignoring differences across populations and focusing only on the environmental good that is being distributed.

¹³⁰ Sen, *Equality of What*, *supra* note 91, at 357, 366.

¹³¹ *Id.* at 357, 368. As Sen explains, even though utility does focus on what goods or resources do to people (in terms of their happiness or preference satisfaction), it fails to support the allocation of more resources to the person in a wheelchair in part because of its informational focus. *Id.* The choice of an "evaluative space" (e.g., primary goods vs. capabilities) has significant consequences for "the distributional patterns (including necessary *inequalities*) in the other spaces." AMARTYA SEN, *INEQUALITY REEXAMINED* 20–21 (1992) [hereinafter SEN, *INEQUALITY REEXAMINED*].

¹³² Sen, *Equality of What*, *supra* note 91, at 366. The capability approach "differs from other approaches" in "tak[ing] the sets of individual capabilities as constituting an indispensable and central part of the relevant informational base" for assessing social inequalities. Sen, *Capability and Well-Being*, *supra* note 106, at 30. It is "concerned with showing the cogency of a particular *space* [capability] for the evaluation of individual opportunities and successes." *Id.* at 50.

To understand how environmental regulations affect different communities, we therefore need to ask how they affect what people in those communities can do and be; in other words, we must assess the impact on people's capabilities and functionings (their well-being). A capability-based theoretical framework for assessing environmental inequities ensures we gather the relevant information (i.e., focus on the relevant "evaluative space") because it directs our attention to human difference and the ways in which "external" and "personal characteristics" affect people's abilities to convert resources into the things they want to do and be.¹³³ In fact, Sen's discussion of human diversity in terms of personal and external characteristics overlaps with environmental justice scholars' discussion of human variation in terms of intrinsic and acquired characteristics.¹³⁴ In addition to personal, or intrinsic, characteristics, such as "age, sex, physical and mental abilities,"¹³⁵ Sen stresses the differences that arise from external, or acquired, characteristics that can result from the "natural and social environment in which we live."¹³⁶ These differences profoundly affect people's capabilities (e.g., the health capability of escaping premature mortality) and the extent to which environmental measures restrict or enhance these capabilities. The health impacts of an environmental measure that seeks to improve air quality will, for example, differ from community to community based on differences in social and environmental factors.¹³⁷

It is these differences among groups and communities that are the primary focus of environmental justice, particularly as it is reflected in laws, such as Executive Order 12,898¹³⁸ and Title VI regulations.¹³⁹ But as Sen acknowledges, capabilities are understood as "attributes of people, not of collectivities, such as communities."¹⁴⁰ Given this focus, we might question whether the approach adequately captures the ways in which people's freedom to achieve valuable functionings is shaped by their communities and group identities. But as Sen has explained, the capability approach does recognize these interdependent

¹³³ SEN, INEQUALITY REEXAMINED, *supra* note 131, at 20.

¹³⁴ See *supra* Part II.B.2.

¹³⁵ SEN, INEQUALITY REEXAMINED, *supra* note 131, at 20.

¹³⁶ *Id.* at 1.

¹³⁷ For example, areas of increased air pollution, often called "hot spots," can occur as a result of air quality regulations, particularly those that rely on economic "pollution trading" programs. See Richard T. Drury et al., *Pollution Trading and Environmental Injustice: Los Angeles' Failed Experiment in Air Quality Policy*, 9 DUKE ENVTL. L. & POL'Y F. 231, 235–236 (1999) (criticizing emissions-trading programs by highlighting the ineffectiveness and injustice of emissions trading in Los Angeles); see also Alice Kaswan, *Environmental Justice and Domestic Climate Change Policy*, 38 ENVTL. L. REP. 10287, 10,299–303 (2008) (discussing the implications of trading in greenhouse-gas emissions for "hotspot" risks created by the existing regulatory system).

¹³⁸ Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 11, 1994), as amended by Exec. Order No. 12,948, 60 Fed. Reg. 6381 (Feb. 1, 1995).

¹³⁹ Civil Rights Act of 1964 §§ 601-02, 42 U.S.C. § 2000d (2006).

¹⁴⁰ SEN, IDEA OF JUSTICE, *supra* note 41, at 244.

capabilities, that is, capabilities that derive their value from “the importance that people attach to being able to do certain things in collaboration with others” (e.g., being able to take part in the community or in the community’s traditions).¹⁴¹ Even though the capability approach embraces the liberal notion that individuals are the proper subject of moral theory, it explicitly recognizes the importance of social norms and influences and acknowledges the interrelated nature of capabilities.¹⁴² In other words, the approach recognizes the importance of groups as “social relations” that partially constitute individuals’ identities, a perspective consistent with movement conceptions, as the following section illustrates.¹⁴³

3. The Capability Approach Compared to Movement Conceptions and the EPA’s Approach to Environmental Justice

i. Movement Conceptions of Environmental Justice

The emphasis the capability approach places on differences arising from social and environmental factors is one of the reasons it captures and can assess environmental injustices. By acknowledging the influence of external characteristics, including those flowing from a given social environment, the capability approach directs our attention to how forms of structural oppression, such as racism and class oppression, affect people’s well-being, a concern at the heart of the environmental justice movement.¹⁴⁴ As Ingrid Robeyns has explained, this gives the capability approach a greater informational reach than other liberal theories: “The capability approach directs our focus to people’s capability sets, but insists that we also need to scrutinize the impact of social norms, the context

¹⁴¹ *Id.* at 246.

¹⁴² Ingrid Robeyns, *The Capability Approach: A Theoretical Survey*, 6 J. HUM. DEV. 93, 107–10 (2005); see also Sabina Alkire, *Using the Capability Approach: Prospective and Evaluative Analyses*, in THE CAPABILITY APPROACH: CONCEPTS, MEASURES AND APPLICATIONS 26, 38–41 (Flavio Comim et al. eds., 2008) (discussing the literature that critiques the capability approach on the ground that it fails to recognize the intrinsic importance of group or collective capabilities and concluding that the debate is essentially one regarding terminology: “the outstanding question is what to call capabilities that i) a person herself values but ii) could not enjoy alone.”).

¹⁴³ See IRIS MARION YOUNG, JUSTICE AND THE POLITICS OF DIFFERENCE 44 (Frank Hunt ed., 1990). (“Social groups are not entities that exist apart from individuals, but neither are they merely arbitrary classifications of individuals according to attributes which are external to or accidental to their identities Group meanings partially constitute people’s identities in terms of the cultural forms, social situation, and history that group members know as theirs, because these meanings have been either forced upon them or forged by them or both. Groups are real not as substances, but as forms of social relations.”).

¹⁴⁴ Structural oppression refers to “systematic” oppression that does not necessarily result from intentional choices or policies, but exists in social and economic norms and institutions. See *id.* at 41 (explaining that the causes of structural oppression are “embedded in unquestioned norms, habits, and symbols, in the assumptions underlying institutional rules and the collective consequences of following those rules”).

in which economic production and social interactions take place and how that affects people's well-being"¹⁴⁵ Similarly, the environmental justice movement has called attention to the ways in which environmental injustices are connected to other social injustices as a result of social, political, and economic forces.

In his taxonomy of environmental justice, Robert Kuehn categorizes this aspect of environmental justice as a demand for social justice.¹⁴⁶ As Kuehn observes, movement participants understand various deprivations as interrelated: "As one community organizer explained, oppressed people do not have compartmentalized problems—they do not separate the hazardous waste incinerator from the facts that their schools are underfunded, that they have no day care, no sidewalks or streetlights, or no jobs."¹⁴⁷ Similarly, the seventeen principles adopted in 1991 at the First National People of Color Environmental Leadership Summit clearly reflect an understanding of environmental injustice as one deprivation linked to many others.¹⁴⁸ The summit, according to Robert Bullard, "broadened the movement beyond its early focus against toxics to include issues of public health, worker safety, land use, transportation, housing, resource allocation, and community empowerment."¹⁴⁹ Indeed, both activists and scholars have moved away from the phrase "environmental equity" in favor of "environmental justice" precisely because justice is understood to capture the underlying social and economic context, not simply the unequal distribution of environmental goods and bads.¹⁵⁰

Given the movement's focus on issues of race and class, David Schlosberg has questioned why academic attempts to theorize environmental justice do not adequately address how social conditions, particularly the lack of recognition at the individual and group level, produce social inequalities.¹⁵¹ He notes

¹⁴⁵ Robeys, *Justice as Fairness and the Capability Approach*, *supra* note 107, at 405.

¹⁴⁶ Robert R. Kuehn, *A Taxonomy of Environmental Justice*, 30 ENVTL. L. REP. 10,681, 10,698 (2000).

¹⁴⁷ *Id.* at 10,699 (citing JONATHAN F. KING, *A Place at the Table*, SIERRA, May/June 1993, at 51, 58).

¹⁴⁸ See UNITED CHURCH OF CHRIST, ALMOST EVERYTHING YOU NEED TO KNOW ABOUT ENVIRONMENTAL JUSTICE, 10–11, *available at* http://www.ucc.org/justice/advocacy_resources/pdfs/environmental-justice/almost-everything-you-need-to-know-about-environmental-justice-english-version.pdf (quoting the seventeen principles). For example, the principles affirm the right to work in a healthy environment without sacrificing employment prospects and the need to rebuild urban and rural areas while ensuring "fair access for all to the full range of resources." *Id.*

¹⁴⁹ Robert D. Bullard, *Environmental Justice in the Twenty-First Century*, in THE QUEST FOR ENVIRONMENTAL JUSTICE, *supra* note 25, at 19–20.

¹⁵⁰ SCHLOSBERG, *supra* note 23, at 58 ("The term justice replaced equity in the literature of the movement because those involved in, and reflecting on, the movement understood *justice* as a more inclusive term that incorporated equity and much more.").

¹⁵¹ *Id.* at 58–64. In addition to issues of recognition, Schlosberg's study illuminates how movement groups articulate environmental justice in plural terms, emphasizing the importance of equal distribution, recognition, participation, and capabilities. He emphasizes that "at the very

that “[t]he central concern of many environmental justice groups is community and cultural survival in a system where recognition is denied and communities and cultures are thoroughly devalued.”¹⁵² This devaluation often takes the form of indifference to culture, particularly the culture of indigenous populations.¹⁵³ For example, the use of aquifer water to slurry coal from Black Mesa mines negatively affects springs that the Navajo and Hopi peoples use for both agricultural purposes and religious ceremonies; in addition to restricting agricultural uses of water, this practice clearly fails to recognize the importance of living a life in accordance with one’s religious, spiritual, and cultural beliefs.¹⁵⁴

The capability approach explicitly recognizes these cultural impacts as part of the information relevant to assessing a particular policy or practice because the capabilities of taking part in religious and cultural traditions and of being free to live a life in accordance with one’s moral and religious beliefs are capabilities people have reason to value. To assess the justice of a particular practice, we therefore need to know more than *how much* water these Navajo and Hopi communities have (the distributive approach); we need to know what these communities can *do* with the water (the capability approach). If a policy regarding water use results in a serious deprivation of cultural and religious capabilities, that information is vital to any decision-making process that claims to take environmental justice concerns into consideration.

Furthermore, the prospective use of the capability approach, which is explained in more depth below,¹⁵⁵ provides an opportunity to address issues of recognition because it can help policymakers investigate how social and economic forces contribute to deprivations relevant to environmental policies.¹⁵⁶ For example, disasters, such as those precipitated by Hurricane Katrina and the Deepwater Horizon oil spill, have devastating effects on minority and low-income populations, restricting a range of capabilities ranging from being healthy to being well-sheltered and moving about freely.¹⁵⁷ Once key capability deprivations have been identified, the approach directs attention to the questions

least, it should be clear that environmental justice means much more than a lack of equity in the distribution of environmental ills.” *Id.* at 75.

¹⁵² *Id.* at 62.

¹⁵³ *Id.* at 63.

¹⁵⁴ *Id.* at 64 (citing VALERIE KULETZ, *THE TAINTED DESERT: ENVIRONMENTAL AND SOCIAL RUIN IN THE AMERICAN WEST* 205–44 (1998)).

¹⁵⁵ See *infra* Part IV.A.

¹⁵⁶ Sabina Alkire discusses an example of a “prospective analysis” grounded in the capability approach: a study of development and education in India. Alkire, *supra* note 142, at 43–45. After identifying education as valuable in itself and as an instrumental means of advancing other capabilities, the study investigates the deprivations in education and its potential causes. *Id.* Next, “[h]aving diagnosed, as it were, core issues, the analysis turns to actions that people . . . could undertake as *agents* in order to redress the situation.” *Id.* at 45.

¹⁵⁷ See, e.g., ROBERT R.M. VERCHICK, *FACING CATASTROPHE: ENVIRONMENTAL ACTION FOR A POST-KATRINA WORLD* 136–42 (2010).

of how and why these communities suffer such severe deprivations in order to propose policies that seek to prevent, lessen, or remedy them.

In his recent study of disaster law and policy, Robert Verchick asks such questions by investigating the ways in which race and class contribute to social vulnerabilities in areas such as housing, transportation, and urban development that cause some communities to suffer greater risk exposure and injury.¹⁵⁸ For example, after Hurricane Katrina struck New Orleans, lack of personal transportation resulted in the permanent displacement of “[h]undreds of thousands of people, many of them poor and African American.”¹⁵⁹ As Verchick explains, the evacuation plan assumed that people would be able to drive out of New Orleans in their cars, but many of New Orleans’s poor households did not have cars: “21,787 of these households without a car were black,” while only “2,606 were white.”¹⁶⁰ By examining the underlying causes for such severe deprivations in capabilities, policymakers can recommend more effective policies—for example, an evacuation strategy that protects *all* communities.

ii. The EPA’s Approach to Environmental Justice

The capability approach also resonates with the EPA’s emerging approach to environmental justice. The capability approach’s informational focus could be easily integrated into the EPA’s most recent guidance (Interim EJ Guidance) regarding the integration of environmental justice into the development process for Agency actions, broadly defined to “include rules, policy statements, risk assessments, guidance documents, models that may be used in future rulemakings and strategies that are related to regulations.”¹⁶¹ The Interim EJ Guidance emphasizes the need to consider environmental justice concerns in deciding whether to pursue an action and identifies the opportunities for incorporation of these concerns at various stages in the development of an action, including the information-gathering phase and the development of regulatory options.¹⁶² A focus on capabilities at these stages would ensure the Agency identifies deprivations that the distributive focus on environmental goods and bads may miss (for example, the way existing laws and policies restrict individuals’ capabilities to practice cultural and religious beliefs).¹⁶³

¹⁵⁸ *Id.*

¹⁵⁹ *Id.* at 136.

¹⁶⁰ *Id.*

¹⁶¹ EPA, INTERIM EJ GUIDANCE, *supra* note 13, at 1.

¹⁶² *Id.* at 20, 27–29.

¹⁶³ Although the Interim EJ Guidance encourages the collection of data regarding the potential impacts on minority, low-income, and indigenous populations (a commendable step forward), it describes the overarching goal as the evaluation of the distribution of environmental burdens and benefits, an approach that does not guarantee decision makers gather information about the various ways benefits and burdens actually enhance or limit people’s lives. *See id.* at 3 (explaining

Although the Interim EJ Guidance speaks in terms of the distribution of goods and bads, rather than capabilities, aspects of its approach implicitly acknowledge the importance of capabilities, particularly health capabilities, in assessing the distributive consequences of environmental policies. The guidance contains a list of six factors, developed by the EPA's Office of Environmental Justice, to assist rulemakers in identifying existing and potential disproportionate impacts.¹⁶⁴ In addition to a community's proximity to environmental hazards, such as industrial plants, the guidance recognizes that intrinsic and acquired characteristics can increase a population's susceptibility, noting for example that "[m]inority, low-income, and indigenous children are at greater risk because factors such as poverty, poor nutrition, pre-existing health conditions, lack of access to health care, lack of information, lack of exercise, psychosocial stress, and lack of social capital contribute to greater susceptibility to environmental hazards."¹⁶⁵ It also acknowledges that "unique exposure pathways" (e.g., cultural practices that increase fish consumption) can increase a population's exposure to hazards and that some communities experience cumulative effects from multiple sources of pollution, directing attention to the EPA's *Framework for Cumulative Risk Assessment*.¹⁶⁶ The final factors relevant to assessing disproportionate impacts are the population's "ability, or inability, to participate in the environmental decision-making process" and "[p]hysical infrastructure," such as housing conditions.¹⁶⁷

All these factors reflect an emerging recognition that environmental justice requires a multidimensional approach that measures inequalities based on the quality of people's lives (on what they can do and be), rather than on what people have (the distribution of environmental goods and bads). The consequences of environmental policies—the *impacts* on different communities—are a product of the larger social and natural environment in which people live. By recognizing the importance of a broader informational base that considers this larger environment and its cumulative effects, the guidance is evidence that the EPA is moving toward an approach that understands disproportionate impacts in terms of how they affect people's well-being, an approach that identifies people's capabilities as the relevant evaluative space.¹⁶⁸ But although the guidance is a useful tool for identifying and integrating environmental justice con-

that "fair treatment" requires the consideration of how "burdens" and "benefits" are distributed across populations).

¹⁶⁴ *Id.* at 7–9; see also U.S. ENVTL. PROT. AGENCY, FACTORS FOR IDENTIFYING AND ASSESSING DISPROPORTIONATE ENVIRONMENTAL HEALTH IMPACTS (2010), available at <http://www.epa.gov/ncer/events/calendar/2010/mar17/whitepaper.pdf> (setting out the same six factors in more detail and providing examples).

¹⁶⁵ EPA, INTERIM EJ GUIDANCE, *supra* note 13, at 7.

¹⁶⁶ *Id.* at 8.

¹⁶⁷ *Id.* at 8–9.

¹⁶⁸ The EPA's recent environmental justice analysis of the 2008 DSW rule is further evidence that the Agency is moving in this direction. See *infra* note 263, at 64,668.

cerns into the rulemaking process, it does not tell policymakers *how* to assess existing inequalities.¹⁶⁹ Furthermore, the capability approach, as an informational perspective for assessing social inequalities, does not—without further specification—tell us how to evaluate these inequalities. For this, we need to specify the relevant capabilities and adopt a normative rule for how capabilities should be distributed in society.

III. THE CAPABILITY APPROACH TO ENVIRONMENTAL JUSTICE: IDENTIFYING CAPABILITY IMPACTS AND EVALUATING INEQUALITIES

The capability approach, as Sen develops it, is “radically *underspecified*” in that it does not provide a list of relevant capabilities or a means by which to evaluate them.¹⁷⁰ Indeed, even though inequalities are judged by reference to capabilities, the approach itself does not mandate that society choose policies that equalize everyone’s capabilities regardless of the costs and consequences; in other words, it does not resolve tensions between aggregative and distributive concerns, even though it does draw our attention to disparities in social advantage.¹⁷¹ For Sen, this is a virtue of the approach. It can be applied in different ways “depending on the nature of the questions that are being addressed (for example, policies dealing respectively with poverty, or disability, or cultural freedom) and, more practically, on the availability of data and of informative material that can be used.”¹⁷² In addition to questions of application and data, the specification of the relevant capabilities and the rules for evaluating them involves normative choices.¹⁷³ In this section, I further develop a capability approach to environmental justice by proposing ways in which to identify, weigh, and measure the relevant capabilities and by adopting a distributive rule that evaluates inequalities relative to an established threshold. The focus of both policy design and policy evaluation should be on the negative and positive impacts to people’s lives or, in capability terms, on the potential restriction and enhancement of people’s capabilities.

¹⁶⁹ See EPA, INTERIM EJ GUIDANCE, *supra* note 13, at 6 (acknowledging that “this Guide does not provide you with guidance on how to *evaluate* potential EJ [environmental justice] concerns”).

¹⁷⁰ Ingrid Robeyns, *The Capability Approach in Practice*, 14 J. POL. PHIL. 351, 353 (2006) [hereinafter Robeyns, *Capability Approach in Practice*]; see also Thomas Pogge, *Can the Capability Approach Be Justified?*, 30 PHIL. TOPICS 167 (2002) (arguing that the capability approach fails to specify a workable criterion that can be used to assess the relative justice of different social institutions).

¹⁷¹ See SEN, IDEA OF JUSTICE, *supra* note 41, at 232–33.

¹⁷² *Id.*

¹⁷³ Robeyns, *Capability Approach in Practice*, *supra* note 170, at 353.

A. *Identifying Capability Impacts: The Role of Public Deliberation*

Aside from acknowledging the centrality of some “basic capabilities,” such as being well-nourished, being clothed and sheltered, and being able to move about freely, Sen’s capability approach does not commit itself to a specific list or ranking of capabilities.¹⁷⁴ Other scholars have, however, identified the capabilities central to particular theories of political and social justice. Martha Nussbaum’s well-known list of the “central human capabilities” required for a life worthy of human dignity is one example.¹⁷⁵ Elizabeth Anderson has also specified a list based on a principle of democratic equality.¹⁷⁶ Of course, all efforts to specify a list involve normative commitments: in Nussbaum’s case, these commitments draw from Aristotelian conceptions of human dignity,¹⁷⁷ and in Anderson’s case, these commitments are grounded in the equality required for democratic citizenship.¹⁷⁸

The capability approach applied to environmental justice also involves normative commitments, namely a commitment to addressing inequalities resulting from the unfair distribution of environmental benefits and burdens. But the process of specifying a list consistent with this principle is less ambitious in scope than Nussbaum’s or Anderson’s projects because we need not identify the universe of capabilities essential to social justice, but instead may focus on generating a list of those most salient to environmental law and policy. Moreover, the “most salient” capabilities are likely to change depending on the use of the approach (generating policy vs. evaluating policy options); the particular pollutant, practice, or process in question; and the data available to assess capability

¹⁷⁴ See Sen, *Equality of What*, *supra* note 91, at 367; see also Sen, *Capability and Well-Being*, *supra* note 106, at 40–42 (explaining that, given the moral importance of fulfilling “basic needs,” a focus on “equality in the fulfillment of certain “basic capabilities”” may be “an especially plausible approach to egalitarianism in the presence of elementary deprivation,” but that the capability approach can be used to analyze more than basic capabilities).

¹⁷⁵ NUSSBAUM, *supra* note 91, at 76–78. The central capabilities are organized around ten dimensions: life (e.g., avoiding premature death); bodily health (e.g., “being able to have good health”); bodily integrity (e.g., being able to move about freely); senses, imagination, and thought (e.g., being literate); emotions (being able “to love” and “grieve”); practical reason (e.g., “being able to form a conception of the good in life”); affiliation (e.g., being able to engage in forms of “social interaction”); other species (“Being able to live with concern for and in relation to animals, plants, and the world of nature.”); play (“Being able to laugh, to play, to enjoy recreational activities.”); control over one’s environment both political and material (e.g., being able to participate in political decision making and “being able to hold property”). *Id.*

¹⁷⁶ Elizabeth Anderson, *What is the Point of Equality?*, 109 *ETHICS* 287, 316–321(1999); see also Elizabeth Anderson, *Justifying the Capabilities Approach to Justice*, in *MEASURING JUSTICE: PRIMARY GOODS AND CAPABILITIES* 81, 83 (Harry Brighouse & Ingrid Robeyns eds., 2010) (“Democratically relevant functionings include adequate safety, health and nutrition, education, mobility and communication, the ability to interact with others without stigma, and to participate in the system of cooperation.”) [hereinafter Anderson, *Justifying the Capabilities Approach*].

¹⁷⁷ NUSSBAUM, *supra* note 91, at 70, 159–60.

¹⁷⁸ Anderson, *Justifying the Capabilities Approach*, *supra* note 176, at 83.

impacts. Regardless of the use, however, both theorists of the capability approach and scholars of environmental law and justice agree that public participation is an essential part of the process.¹⁷⁹ The identification of relevant capabilities therefore *requires* public involvement.

As noted above, consistent with Executive Order 12,898, the EPA's definition of environmental justice explicitly incorporates this commitment to public participation with an emphasis on "meaningful involvement."¹⁸⁰ The Agency has made admirable progress in this direction, for example, in its promotion of collaborative problem solving at the local level¹⁸¹ and its recent environmental justice analysis of the DSW rule.¹⁸² Moreover, the EPA's Interim EJ Guidance for considering environmental justice concerns underscores the potential inadequacy of minimum notice and comment requirements, explaining that "meaningful involvement" may require "special efforts to connect with populations that have been historically underrepresented in decision making and that have a wide range of educational levels, literacy, or proficiency in English."¹⁸³ The guidance also encourages public participation early in the process to ensure identification of all relevant issues and establishes basic guidelines and issues for consideration.¹⁸⁴

¹⁷⁹ For discussions of public participation in environmental decision making, see GRAHAM SMITH, *DELIBERATIVE DEMOCRACY AND THE ENVIRONMENT* 54–76 (2003) (drawing on deliberative democratic theory to explore how plural environmental values can be incorporated into political decision making); Walter F. Baber & Robert V. Bartlett, *Problematic Participants in Deliberative Democracy: Experts, Social Movements, and Environmental Justice*, 20 INT'L J. PUB. ADMIN. 5, 6, 8–16 (2007) (examining the role of experts and social movements in deliberative democratic processes); Bunyan Bryant, *Pollution Prevention and Participatory Research as a Methodology for Environmental Justice*, 14 VA. ENVTL. L.J. 589 (1995) (advocating community participation in researching environmental problems); Eileen Gauna, *The Environmental Justice Misfit: Public Participation and the Paradigm Paradox*, 17 STAN. ENVTL. L.J. 3, 5, 31–57 (1998) (arguing that administrative decision making does not effectively include participation by environmental justice communities and proposing a new model for public participation); Carrie Menkel-Meadow, *Getting to "Let's Talk": Comments on Collaborative Environmental Dispute Resolution Processes*, 8 NEV. L.J. 835, 835–851 (2008) (responding to arguments regarding collaborative problem solving in Bradley Karkkainen, *Getting to "Let's Talk": Legal and Natural Destabilizations and the Future of Regional Collaboration*, 8 NEV. L.J. 811 (2008)); Wendy Wagner et al., *Industry Dominance in Publicly Important Rulemakings: An Empirical Study of EPA's Hazardous Air Pollutant Rules*, __ ADMIN. L. REV. __ (forthcoming 2011), available at http://works.bepress.com/wendy_wagner/3/ (finding imbalances in interest-group participation between industry and environmental groups in the EPA's rulemaking process); .

¹⁸⁰ See EPA, DRAFT EJ METHODOLOGY, *supra* note 10, at 1.

¹⁸¹ See EPA'S ENVIRONMENTAL JUSTICE COLLABORATIVE PROBLEM-SOLVING MODEL, *supra* note 3, at 1.

¹⁸² Definition of Solid Waste, 76 Fed. Reg. 44,094-01, 44,103–44,108 (July 22, 2011).

¹⁸³ EPA, INTERIM EJ GUIDANCE, *supra* note 13, at 13.

¹⁸⁴ *Id.* at 13–14. Several years ago, the EPA also issued a guidance on incorporating environmental justice into its processes and analyses under the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4321–4370e (2006). U.S. ENVTL. PROT. AGENCY, FINAL GUIDANCE FOR INCORPORATING ENVIRONMENTAL JUSTICE CONCERNS IN EPA'S NEPA COMPLIANCE ANALYSES § 1.0 (1998), available at

The meaningful involvement of citizens is also a necessary (and sometimes sufficient) element of myriad theories of democratic justice,¹⁸⁵ and theories based on the capability approach are no exception. In Sen's formulation of the capability approach, public deliberation is a crucial means of gathering the information we need to identify and assess social inequalities:

[S]ocial evaluation may be starved of useful information and good arguments if they are entirely based on separated and sequestered cogitation. Public discussion and deliberation can lead to a better understanding of the role, reach and significance of particular functionings and their combinations.¹⁸⁶

He gives the example of public dialogue regarding gender-based inequalities in India, where the growing involvement of women in public political life and discussion has led to a better understanding of important capabilities, such as the freedom to deviate from family roles that restrict social and economic opportunities.¹⁸⁷

http://www.epa.gov/environmentaljustice/resources/policy/ej_guidance_nepa_epa0498.pdf. The guidance contains recommendations for increasing the public participation of minority and low-income communities. *Id.* § 4. NEPA's requirements that agencies consider alternatives to a proposed action, 42 U.S.C. § 4332(C), as well as NEPA regulations requiring that agencies consider the cumulative effects (including the social and cultural impacts) of proposed actions, 40 C.F.R. § 1508.8, make the NEPA process a promising avenue for the consideration of environmental justice. Environmental rulemaking by the EPA is, however, largely exempt from NEPA requirements either as a result of express statutory exemptions or under the court-made doctrine of functional equivalence, which provides for an exemption if the relevant statute and regulations provide a process, including public-participation procedures, that is functionally equivalent to NEPA's process:

The Agency is exempted by statute for actions taken under the Clean Air Act and for most Clean Water Act programs. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), requires EPA to comply only with the substantive, not the procedural, requirements of other environmental laws for on-site responses. In the case of other EPA programs, the courts have found EPA procedures to be "functionally equivalent" to the NEPA process and therefore these EPA programs are exempt from NEPA procedural requirements.

Id. § 1.2.1; *see also* Env'tl. Prot. Agency, Notice of Policy and Procedures for Voluntary Preparation of National Environmental Policy Act (NEPA) Documents, 63 Fed. Reg. 58,045-02, 58,045-58,046 (Oct. 29, 1998) (noting when the EPA is required to comply with NEPA); Uma Outka, *NEPA and Environmental Justice: Integration, Implementation, and Judicial Review*, 33 B.C. ENVTL. AFF. L. REV. 601, 610-14 (2006) (discussing NEPA's federal action requirement and the EPA's statutory and judicial exemptions).

¹⁸⁵ Deliberative democratic theory is, for example, centrally concerned with the principles and processes of public reasoning about political issues. *See, e.g.,* AMY GUTMANN & DENNIS THOMPSON, *DEMOCRACY AND DISAGREEMENT* (1996).

¹⁸⁶ SEN, *IDEA OF JUSTICE*, *supra* note 41, at 242.

¹⁸⁷ *Id.* at 242, 350-51.

Although Sen does not detail how public deliberation could or should be used to identify relevant capabilities, other scholars have outlined possible procedures. For example, Sabina Alkire has used a practical reasoning method to evaluate three Oxfam development projects in Pakistan.¹⁸⁸ To help guide the participatory process for identifying valuable capabilities, facilitators used a set of general dimensions that reflect the most basic reasons for human action.¹⁸⁹ These dimensions include life, health, and security; knowledge; work and play; relationships; spirituality; religion; inner peace; and empowerment.¹⁹⁰ Developed by others through a process of practical reasoning, these general reasons for acting arguably apply across cultures and do not incorporate normative content in the way, for example, Nussbaum's more detailed capability list does.¹⁹¹ As Alkire details, the general dimensions helped guide an iterative process in which local communities identified the expansion and contraction of capabilities by discussing the positive and negative impacts of different development projects.¹⁹²

Environmental rulemakers could facilitate a similar process to identify the capability impacts of environmental policies. Rulemakers would begin by identifying known and potential capability impacts to minority and low-income populations. Impacts to basic capabilities related to health, such as being able to live a normal life span and being able to live a life free from avoidable disease, are likely to top the list, but impacts to a range of other capabilities, such as being educated, living free from poverty, and being able to move about freely, may also make the list in part because basic health-related capabilities are instrumental to these and so many other capabilities.¹⁹³ The next step is to engage communities in a discussion of what individuals perceive to be the positive and negative impacts of a given environmental hazard (e.g., a pollution source), using Alkire's general dimensions to guide deliberation and ensure all capability

¹⁸⁸ SABINA ALKIRE, VALUING FREEDOMS: SEN'S CAPABILITY APPROACH AND POVERTY REDUCTION 43–59 (2002).

¹⁸⁹ *Id.* at 47–48.

¹⁹⁰ *Id.* at 250–51. “Empowerment” means “an increase in autonomy.” *Id.* at 200 n.4. In the environmental justice context, examples of capability impacts in this dimension might be impacts to political freedoms, such as the capability to (meaningfully) participate in environmental decision making at all political levels and the capability to express one's views regarding environmental policies and decisions.

¹⁹¹ *Id.* at 49, 54–56. I would add that framing the discussion in this way also tracks the way the capability approach has been applied to assess levels of human development.

¹⁹² *Id.* at 225; see also NUSSBAUM, *supra* note 91, at 76–78. Nussbaum's list also identifies general dimensions (e.g., life, health, emotions) and could be used in a similar fashion without adopting her specification of the central capabilities within these different dimensions. *Id.*

¹⁹³ Consider, for example, a young girl with asthma who lives in a neighborhood with multiple sources of air pollution. She is likely to miss more school days and her ability to play outdoors will be restricted as a result of health complications. SARAH BURD-SHARPS ET AL., THE MEASURE OF AMERICA: AMERICAN HUMAN DEVELOPMENT REPORT 2008-2009 67 (2008) [hereinafter THE MEASURE OF AMERICA].

impacts are identified.¹⁹⁴ The same process could identify the ways in which the presence or absence of environmental benefits, such as parks and public transportation systems, affect people's lives. This ensures the identification of potential capability impacts overlooked by rulemakers, including impacts to nonmaterial capabilities, such as taking part in one's social and political community.¹⁹⁵

In sum, relevant capability impacts could be identified and refined in stages. Agency rulemakers should begin with a preliminary list of known and potential impacts in developing an action and refine the list by continuing the iterative process with relevant communities at different stages of rulemaking as more information is available and policy options are developed. During the rulemaking process, public input therefore complements other methods, such as empirical health studies, for gathering information about relevant impacts to human lives.¹⁹⁶ The objective would be to refine the more general list of capability impacts over time to identify the most serious and important impacts relevant to the problem under consideration.¹⁹⁷

Separating the key impacts from the trivial ones also requires public deliberation.¹⁹⁸ Again, in some cases, impacts to basic capabilities related to health (e.g., being able to live a normal lifespan) are clear priorities. But the relative importance of, for example, economic and health capabilities may not be apparent without community input. Again Alkire's study provides an example of how public involvement might proceed. Two methods were used.¹⁹⁹ In one method, after grouping the capability impacts according to various dimensions (e.g., health, work, relationships), facilitators asked participants to rank the groups

¹⁹⁴ As Alkire notes, the accuracy and success of this participatory process turns in large degree on the skills of facilitators. See ALKIRE, *supra* note 188, at 225, 232. But as the EPA has already recognized, approaches other than standard notice and comment procedures may be necessary to ensure the meaningful involvement of certain populations.

¹⁹⁵ As Alkire explains, unstructured public discussions may leave out important capabilities; a set of dimensions ensures a comprehensive discussion "by providing 'an assemblage of reminders of the range of possibly worthwhile activities and orientations open to [a community].'" *Id.* at 224 (quoting JOHN FINNIS, *NATURAL LAW AND NATURAL RIGHTS* 81 (1980)).

¹⁹⁶ Alkire notes that community involvement in specifying and weighting human impacts was part of a larger assessment process that used other tools to gain relevant information. *Id.* at 224. Indeed, individuals will not have all the relevant information necessary to identify impacts; public participation is a necessary, but not a sufficient, step in identifying capability impacts. See SEN, *IDEA OF JUSTICE*, *supra* note 41, at 284–86 (noting that an individual's perceptions of his or her health may be limited by knowledge and social experience).

¹⁹⁷ See Robeyns, *Capability Approach in Practice*, *supra* note 170, at 356 (advocating that capabilities be specified at "different levels of generality (if a selection aims at an empirical application or is intended to lead to implementable policy proposals, then the list should be drawn up in at least two stages, whereby each stage will generate a list at a different level, ranging from the level of ideal theory to more pragmatic lists)").

¹⁹⁸ See SEN, *IDEA OF JUSTICE*, *supra* note 41, at 242 (explaining the importance of public reasoning in choosing and weighing capabilities).

¹⁹⁹ ALKIRE, *supra* note 188, at 225.

from the strongest to the weakest.²⁰⁰ In the other method, each participant was asked to identify the “top three” groups of impacts.²⁰¹ Both methods resulted in partial rankings. In the first approach, some impacts received equal weight, while others could not be ranked because participants could not reach a consensus.²⁰²

Partial ranking may at first appear a weakness, but it is actually a strength of the capability approach. Because the approach focuses on real-world comparisons, complete agreement is often unnecessary. Partial orderings can still help us choose among actual policy options, as Sen emphasizes with various examples: “[T]o show that slavery severely reduces the freedom of the slaves, or that the absence of any guarantee of medical attention curtails our substantive opportunities of living, or that severe undernourishment of children . . . is detrimental to justice, we do not need a unique set of weights on the different dimensions involved”²⁰³ Similarly, if air pollution severely limits some children’s health, as well as their educational and social opportunities, we may not need a complete ordering of capabilities to determine that these impacts warrant action or to choose among different environmental standards. Moreover, even if public deliberation does not result in a complete ordering, participants will identify some capability impacts as more pressing than others, allowing us to assign priority to some over others.²⁰⁴

Another possibility is to identify the most serious capability impacts and give them priority and equal weighting. The Human Development Index follows this system in assigning equal weight to three functionings: educational achievement, life expectancy, and economic standard of living.²⁰⁵ Other capabilities might receive less or no weight. For example, impacts to basic health-related capabilities, such as being free from premature death and being free from avoidable disease, could receive equal weighting, while less weight might be assigned to other capabilities, such as educational and social capabilities, which depend upon the enhancement of basic health-related capabilities.²⁰⁶

²⁰⁰ *Id.* at 226.

²⁰¹ *Id.* at 227.

²⁰² *Id.* at 226–27. Robeyns notes that in “larger scale policy contexts, discussion of the relative weights is the substance of political debates,” implying perhaps less public participation than is possible for “small-scale projects or evaluations,” such as those in Alkire’s study. Robeyns, *Capability Approach in Practice*, *supra* note 170, at 358. But the EPA is already committed to and engaged in dialogue with vulnerable populations and could easily incorporate capability discussions into current activities. Robeyns also notes the possibility of soliciting information on weights through questionnaires, a method not yet used, but worth further consideration. *Id.*

²⁰³ SEN, IDEA OF JUSTICE, *supra* note 41, at 243.

²⁰⁴ See SEN, INEQUALITY REEXAMINED, *supra* note 131, at 46 (explaining that without specifying weights, a “dominance partial order” results from the specifying of valuable capabilities and functionings and this reflects agreement that “[h]aving more of *each* relevant functioning or capability is a clear improvement”).

²⁰⁵ UNDP, HUMAN DEVELOPMENT REPORT, *supra* note 111, at 356.

²⁰⁶ See RUGER, *supra* note 114, at 76.

B. Evaluating Inequalities: Choosing Indicators and a Distributive Rule

Once the relevant capability impacts are identified, the next set of questions involves measurement and evaluation. Rather than proposing one specific methodology, my intent in this section is to highlight some of the key questions researchers and policymakers should consider and to identify issues of particular concern from an environmental justice perspective. An analysis of the various ways in which the capability approach has been operationalized is beyond the scope of this article.

The first question in measuring capabilities is whether to focus on capabilities (well-being freedom) or functionings (well-being achievement).²⁰⁷ From a policy standpoint, capabilities are the ideal metric because they focus on the opportunities people have to be and do the things they have reason to value, thereby acknowledging the importance of choice and process. For example, if a person chooses to fast and therefore not achieve the basic capability of being well-nourished, this should have little bearing on public welfare policies, whereas public policies should address people's inability to be well-nourished when people have no choice.²⁰⁸ In short, public policy should be concerned with individuals' freedom to achieve the outcomes they have reason to value, rather than with whether they actually achieve them.²⁰⁹

But although capabilities are the theoretical focus, applications of the capability approach, especially large-scale quantitative applications, tend to measure capabilities in terms of particular functionings.²¹⁰ Indeed, capabilities

²⁰⁷ In addition to well-being freedom and well-being achievement, Sen's approach includes agency freedom and agency achievement as possible spaces in which to evaluate and compare individuals' advantages. See Sen, *Capability and Well-Being*, *supra* note 106, at 35. Agency involves the pursuit of goals an individual has reason to endorse, but these goals may or may not advance that individual's well-being. *Id.* I do not discuss agency freedom and achievement because, as Sen points out, deprivations relevant to policymaking are arguably those to a person's well-being: for example, "the state may have better grounds for offering support to a person for overcoming hunger or illness than for helping him to build a monument to his hero, even if he himself attaches more importance to the monument than to the removal of his hunger or illness." *Id.* at 36.

²⁰⁸ See *id.* ("[F]or adult citizens, *well-being freedom* may be more relevant to state policy . . . than *well-being achievement* (e.g., the state may have reason to offer a person adequate opportunities to overcome hunger, but not to insist that he must take up that offer and cease to be hungry).").

²⁰⁹ See Ruger, *Health, Capability, and Justice: Toward a New Paradigm of Health Ethics, Policy and Law*, *supra* note 114, at 136–37.

²¹⁰ Robeyns, *Capability Approach in Practice*, *supra* note 170, at 359 (noting that "applications have focussed on functionings rather than capabilities" and research that measures capabilities is in the early stages). In Sen's approach, a person's overall freedom is measured by that person's "capability set," which is made up of the different combinations of functionings (the set of "functioning *n* tuples") from which a person may choose: "In the space of functionings, any *point* represents an *n* tuple of functionings. Capability is a *set* of such functioning *n* tuples, representing the various alternative combinations of functionings from which the person can choose one combination." SEN, *INEQUALITY REEXAMINED*, *supra* note 131, at 50.

are defined derivatively from functionings. The capability to move about freely, for example, is the freedom to achieve the functioning of moving about freely. Functionings may, therefore, serve as proxies for capabilities, but they obviously will fail to measure the opportunity, or freedom, aspect of capabilities. For this reason, researchers have also attempted to measure capabilities directly. Small-scale qualitative studies, such as Alkire's, are able to measure capabilities, although the results may not apply in other contexts. And to measure capabilities on a large scale, researchers have used surveys with questions that distinguish achievements (functionings) from opportunities (capabilities).²¹¹

Whatever the approach, research regarding capabilities and functionings measures chosen indicators, or variables, of a given capability or functioning. For example, the Human Development Index measures the functioning of educational achievement by measuring adult literacy and school enrollment.²¹² Often, researchers use available data sets to measure well-being in terms of functionings. Researchers have, for example, measured well-being using the Bank of Italy's Survey of Household Income and Wealth, which contains data from several dimensions, such as health, education, housing, and relationships.²¹³

Once the data are gathered and policymakers have information about relevant capabilities, they will need to adopt a distributive rule in order to evaluate differences in capabilities and identify the differences that demand the most attention. As Elizabeth Anderson has explained, the evaluation of the justness of different levels of capabilities requires a distributive rule: "Theories of distributive justice must specify two things: a metric and a rule. The metric characterizes the type of good subject to demands of distributive justice. The rule specifies how that good should be distributed."²¹⁴ She argues that capability theorists agree on the metric (capabilities or functionings).²¹⁵ They also agree that the distributive rule should be distribution sensitive (i.e., it should specify the appropriate pattern of distribution in society).²¹⁶ But to specify the pattern of distribution, theorists must adopt a normative principle of equality.²¹⁷ Theories of social justice tend to adopt one of three approaches: society must guarantee equal opportunities or holdings (an equalitarian rule), society must give priority to the relative gains and losses of the least advantaged (a prioritarian rule), or society must guarantee all individuals a designated minimum threshold (a suffi-

²¹¹ See, e.g., Paul Anand et al., *The Measurement of Capabilities*, in 1 ARGUMENTS FOR A BETTER WORLD, *supra* note 107, at 283, 286–87. For example, one question designed to measure health-related capabilities was: "Does your health in any way limit your daily activities compared to most people of your age?" *Id.* at 304.

²¹² UNDP, HUMAN DEVELOPMENT REPORT, *supra* note 111, at 356.

²¹³ Robeyns, *Capability Approach in Practice*, *supra* note 170, at 365.

²¹⁴ Anderson, *Justifying the Capabilities Approach*, *supra* note 176, at 81.

²¹⁵ *Id.* at 82.

²¹⁶ *Id.*

²¹⁷ *Id.*

cientarian rule).²¹⁸ Like Nussbaum's approach, Anderson's distributive rule is sufficientarian: citizens are entitled to "a capability set sufficient to enable them to function as equals in society."²¹⁹

From the perspective of environmental justice, an equalitarian rule demanding equality of capabilities makes little sense because it does not identify the optimal level of relevant functionings (thereby limiting society's obligation to ensure adequate standards) or permit inequalities based on other moral considerations, such as fairness and merit.²²⁰ A prioritarian rule (e.g., Rawls's difference principle) would direct the focus to the least advantaged in terms of relevant capabilities, which is clearly a concern of environmental justice. It does not, however, establish clear goals; in choosing among policy options, it directs us to choose the option that most improves the situation of the least advantaged, but it does not allow us to judge whether we are doing enough. For this, we need a sufficientarian rule that specifies thresholds to which all individuals are entitled.

An approach that best meets the demands of environmental justice would adopt a hybrid rule, one that is both sufficientarian in mandating that environmental hazards and risks do not prevent people from attaining a designated threshold and prioritarian in allocating resources to address the environmental problems that do, in fact, keep some individuals from attaining the threshold. Jennifer Ruger's capability approach to health is an example of an approach with a hybrid distributive rule.²²¹ Ruger advocates shortfall equality as the standard by which to design and assess health policies. In contrast to "attainment equality," which judges social advantage by comparing individuals' absolute levels of achievement, "shortfall equality" compares "*shortfalls of actual achievement from the optimal average* (such as longevity or physical performance)."²²² In Ruger's approach, the goal of health policy is the reduction of shortfall inequalities in two central health capabilities: being able to avoid premature mortality and being able to avoid escapable morbidity.²²³ The objective is to reduce the gap between individuals' actual and maximal health functioning given their natural circumstances, a condition that recognizes human diversity

²¹⁸ *Id.*; see also RUGER, *supra* note 113, at 88.

²¹⁹ Anderson, *Justifying the Capabilities Approach*, *supra* note 176, at 83.

²²⁰ To illustrate how an equality-of-capabilities approach could violate fair treatment principles, Sen gives an example based on the capability to live a long life. SEN, *IDEA OF JUSTICE*, *supra* note 41, at 296. Because women live longer than men, a society committed exclusively to capability equality could argue that men should receive more medical attention than women in order to equalize the capability to live a long life. But this would, of course, "flagrantly violate a significant requirement of process equity (in particular, treating different persons similarly in matters of life and death)." *Id.*

²²¹ RUGER, *supra* note 114, at 88–95.

²²² *Id.* at 89.

²²³ *Id.* at 61.

and its impact on health functioning.²²⁴ Although this objective applies to all individuals, Ruger's approach is prioritarian as well in that the "lower the individual's ability for health functioning, the greater the moral importance of raising it is."²²⁵

Because of its hybrid nature, shortfall equality is an appropriate standard for assessing inequalities in capabilities in the environmental justice context. Once optimal levels for relevant functionings are established, policymakers should identify and investigate the shortfalls from these levels and focus on addressing the greatest shortfalls. In evaluating policy options, policymakers would therefore consider not just the aggregative consequences of different policies (i.e., the extent to which a policy advances the overall well-being of society), but also the distributive consequences of different policies (i.e., the extent to which a policy *reduces* existing shortfalls in individuals' well-being). I expand upon both stages—investigating shortfalls and evaluating policy options—in the next section.

IV. INVESTIGATING AND ADDRESSING CAPABILITY SHORTFALLS: POLICY DESIGN AND EVALUATION

A. *Policy Design: Understanding and Addressing Shortfalls*

In order for environmental regulations to address the shortfalls in capabilities resulting from environmental hazards, policymakers must first understand the relationship between environmental factors, such as the presence of hazardous waste sites, and capabilities. In the capability approach, environmental factors are "conversion factors" because they can influence the degree to which individuals can convert goods and services into actual functionings.²²⁶ Other conversion factors include personal factors, such as physical disabilities, and factors connected to a person's social environment, including social norms and behaviors (e.g., gender norms, racial prejudice).²²⁷ As the environmental justice movement has emphasized, the capabilities of individuals in minority and low-income communities are often affected by a combination of these conversion factors. Before policies can address the shortfalls in these communities,

²²⁴ *Id.* at 90.

²²⁵ *Id.* at 92.

²²⁶ See Ingrid Robeyns, *Sen's Capability Approach and Feminist Concerns*, in *THE CAPABILITY APPROACH*, *supra* note 142, at 82, 84.

²²⁷ *Id.* at 84–85 ("The social conversion factors are determined by a number of societal aspects, such as social institutions (e.g., the educational system, the political system, the family, etc.), social norms (including gender norms, religious norms, cultural norms, moral norms), traditions, and behavior of others in society (e.g., stereotyping, prejudiced behaviour, racism, sexism, homophobic behaviour and so forth). . . . The personal conversion factors are determined by one's mental and physical aspects.").

we need to investigate and understand how environmental factors, alone and in combination with other factors, affect these individuals' well-being.²²⁸

One way to begin gathering this information is to use the capability approach to investigate underlying conditions and causes. The recent human development report for the United States is one example. Like the UNDP Human Development Report, the U.S. report contains a human development index that measures the three dimensions of health, education, and standard of living using specified indicators; the results are disaggregated by location (state and congressional district), gender, race and ethnicity.²²⁹ But the report contains more than the quantitative indicators of health. It supplements these with a discussion of the factors and conditions that contribute to and frustrate the health of different groups and communities in the United States. For example, among the conditions necessary for good health is a "safe, clean living environment." The report highlights racial disparities in asthma hospitalization²³⁰ and underscores the environmental factors, such as pollution, poor housing, and poor public health programs, that frustrate some children's ability to live a healthy life.²³¹

The report therefore does more than identify correlations among health indicators and race (as well as location, gender, and ethnicity); it examines the possible reasons, or mechanisms, behind these relationships. Research of this nature seeks to understand the causal mechanisms that connect different variables, such as life expectancy and race.²³² Although positivist research, like the human development indicators, can identify causal relationships, it cannot explain how and why these relationships happen.²³³ Both kinds of research are important to the policymaker. As one scholar has explained, "[w]ithout establishing a causal relationship, one does not know which factors should be addressed by policy; without establishing the mechanism, one will not understand how to address those factors."²³⁴ A correlation between life expectancy and race may identify the factors policy should address, but it does not tell us *how* to address this relationship.

²²⁸ Research and data collection regarding environmental justice communities is one of the priorities identified in the Executive Order on environmental justice. Exec. Order No. 12,898, § 3-3, 59 Fed. Reg. 7629 (Feb. 11, 1994) *as amended* by Exec. Order No. 12,948, 60 Fed. Reg. 6381 (Feb. 1, 1995).

²²⁹ THE MEASURE OF AMERICA, *supra* note 193, at 2-3. For example, to measure health, researchers used a life expectancy indicator.

²³⁰ *Id.* at 68 ("African American children have a 250 percent higher rate of hospitalization for asthma than white children and a 500 percent higher death rate.").

²³¹ *Id.*

²³² Ann Chih Lin, *Bridging Positivist and Interpretivist Approaches to Qualitative Methods*, 26 POL'Y STUD. J. 162, 163 (1998).

²³³ *Id.* at 167.

²³⁴ *Id.* at 165.

Like the human development indicators, current tools for identifying environmental justice communities²³⁵ allow users to gather data that may identify patterns, or causal relationships, among different variables. For example, the publicly available mapping tool called “EJView” creates maps of geographic areas with information on various factors, including pollution sources, levels of pollution, demographic data, and health data.²³⁶ The Environmental Justice Strategic Enforcement Assessment Tool, currently under development, similarly uses a range of indicators, including “census data, a respiratory hazard index, poverty levels, toxic emissions, infant mortality, [and] an index of documented pollution events,” to identify low-income and minority communities that have been disproportionately affected by environmental burdens.²³⁷

These tools are useful in that they can help identify communities that suffer the worst deprivations in health-related and other capabilities due to multiple sources of pollution and other stressors.²³⁸ But to design rules that effectively *address* these deprivations, rulemakers need to understand the causal mechanisms behind these variables—the *reasons*, for example, that environmental and health indicators are linked to race and income. How are minority and low-income communities influenced by financial incentives, such as the prospect of jobs provided by industrial facilities? How transparent is the regional permitting process? How well are facilities monitored for compliance? Do people participate in local decision making? And how do environmental laws and regulations affect these and other factors at the local level? Answers to these and similar questions require qualitative research at the community level.²³⁹

²³⁵ By “environmental justice community,” I mean a community in which a significant number of people are disproportionately limited in what they can do and be (i.e., their capabilities) as a result of environmental policies.

²³⁶ U.S. ENVTL. PROT. AGENCY, ENVIRONMENTAL JUSTICE GEOGRAPHIC ASSESSMENT TOOL, (2011), available at <http://epamap14.epa.gov/ejmap/entry.html>.

²³⁷ Gayathri Vaidyanathan, *EPA Developing Tool to Assist in Enviro Justice Initiative*, N.Y. TIMES, July 30, 2010, <http://www.nytimes.com/gwire/2010/07/30/greenwire-epa-developing-tool-to-assist-in-enviro-justic-11341.html?pagewated=all>.

²³⁸ See U.S. ENVTL. PROT. AGENCY, FRAMEWORK FOR CUMULATIVE RISK ASSESSMENT 58 (2003) (explaining that “geographically based measures of hazard are potentially useful cumulative measures; although they do not provide information on the risks, the locations of hazards can be used as an indicator of aggregate exposures and, thus, cumulative risks from all of the potential chemicals associated with that site”), available at http://www.epa.gov/raf/publications/pdfs/frmwrc_cum_risk_assmnt.pdf.

²³⁹ In-depth studies at the community level can illuminate the mechanisms that connect conversion factors and capability impacts (e.g., pollution sources and reduced life expectancy), as well as the mechanisms that contribute to correlations between social factors, such as race, and environmental factors, such as the siting of industrial facilities. Moreover, comparative studies of different environmental justice communities can help policymakers identify *common* mechanisms across communities and form policy solutions that address them. See Chih Lin, *supra* note 232, at 176–77. If, for example, comparative studies of certain communities with high rates of childhood asthma hospitalizations show that children lack access to adequate health care because their parents are unaware of state-sponsored insurance programs, national policies designed to disseminate

B. *Evaluating Policy Options*

The integration of environmental justice concerns into early phases of regulation as described above is essential. If rulemakers do not consider capability impacts to vulnerable populations in identifying priorities and designing different regulatory options, they may fail to consider alternatives that reduce the most significant shortfalls in people's capabilities. In fact, scholars have strongly criticized the EPA for its failure to publicly consider meaningful alternatives in the rulemaking process by analyzing, for example, only one alternative in addition to the status quo in its economic analysis of costs and benefits.²⁴⁰ Incorporating environmental justice into the policymaking agenda from the beginning may increase the likelihood that alternatives are proposed that address shortfall inequalities in health-related and other capabilities and that these shortfalls are specifically considered at key stages in the rulemaking process, such as risk assessments and economic cost-benefit analyses. Moreover, when options are finally proposed, the capability approach can complement other perspectives or decision procedures, such as cost-benefit analysis, that are used to evaluate the different proposals.

In this final section, I explain how the capability perspective can improve the analysis of environmental justice impacts during the rulemaking process. Because agencies are required to conduct economic cost-benefit analyses for significant regulatory actions and because these analyses dramatically influence—and in many cases determine—which regulatory option is selected, I focus on what a capability analysis can tell us in comparison to a cost-benefit analysis. To underscore the ways in which the capability perspective on environmental justice might be integrated into the rulemaking process, I end this section with a critique of the EPA's approach to environmental justice in its recent efforts to regulate coal ash as a hazardous material.

1. *Capability Impact Analysis: Providing the Information Economic Analyses Fail to Capture*

Executive Order 12,866 directs federal agencies to assess the costs and benefits of a proposed rule and to adopt the rule only when “the benefits of the intended regulation justify its costs.”²⁴¹ The Order also requires agencies to submit regulatory analyses of “significant regulatory action[s]” to the Office of

information and educate parents might reduce hospitalizations. *See* THE MEASURE OF AMERICA, *supra* note 193, at 67–68.

²⁴⁰ *See, e.g.,* Wagner, *supra* note 73, at 59–60, 62–64. Wagner argues that the EPA considered only one alternative in its regulatory impact analysis of the Clean Air Interstate Rule in order to reduce the rule's vulnerability in litigation; by analyzing only one alternative with a benefit-to-cost ratio of at least 25 to 1, the “EPA positions its final rule as a legal and political no-brainer.” *Id.* at 59.

²⁴¹ Exec. Order No. 12,866, § 1(b)(6), 58 Fed. Reg. 51,735 (Sept. 30, 1993).

Information and Regulatory Affairs (“OIRA”) within the White House’s Office of Management and Budget (“OMB”).²⁴² After review, OIRA can send the regulatory analysis back to the agency for further consideration. In its guidance to agencies conducting these analyses, OMB has emphasized the centrality of an evaluation of costs and benefits to a regulatory analysis and has established standards agencies should follow to measure and evaluate costs and benefits.²⁴³

The centrality of cost-benefit analysis (“CBA”) to the rulemaking process has been challenged on numerous grounds. Scholars of environmental law and policy have questioned whether Congress has actually given agencies the legal authority to make decisions based on CBA, particularly when environmental statutes do not mention CBA and direct the EPA to make rules that promote public health.²⁴⁴ In addition, scholars have argued that the primacy of economic analyses privileges industry and other powerful interests at the expense of environmental and public health interests and that it results in less stringent environmental regulation in practice.²⁴⁵ Transparency is another concern: the voluminous regulatory impact analyses contain technical information accessible only to those with expert knowledge, raising concerns about the impact of CBA on agencies’ democratic accountability.²⁴⁶ In addition to these legal and political concerns, scholars have raised theoretical concerns regarding the way in which costs and benefits are monetized, noting in the environmental context that benefits to public health and the environment are difficult and sometimes impossible to reduce to a monetary metric.²⁴⁷

²⁴² *Id.* § 6(a)(3)(C).

²⁴³ OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, OMB CIRCULAR A-4 (2003) [hereinafter OMB CIRCULAR A-4].

²⁴⁴ *See, e.g.*, RCRA § 1003(a), 42 U.S.C. § 6902(a)(1984) (“The objectives of this chapter are to promote the protection of health and the environment”); Clean Air Act § 109(b)(1), 42 U.S.C. § 7409(b)(1) (1977) (mandating the promulgation of primary ambient air quality standards “requisite to protect the public health” within “an adequate margin of safety”); *see also* Daniel A. Farber, *Rethinking the Role of Cost-Benefit Analysis*, 76 U. CHI. L. REV. 1355, 1372 (2009) (arguing that “[t]he general rule is that environmental statutes provide other regulatory standards and do not allow EPA to base regulation on CBA”); David M. Driesen, *Is Cost-Benefit Analysis Neutral?*, 77 U. COLO. L. REV. 335, 342 (2006) (noting that statutes mandating health-based standard setting sometimes preclude or downplay consideration of cost and statutes with technology-based provisions require consideration of costs to determine whether a standard is feasible but do not require CBA).

²⁴⁵ *See, e.g.*, Wagner et al., *supra* note 179; Sidney A. Shapiro & Christopher H. Schroeder, *Beyond Cost-Benefit Analysis: A Pragmatic Reorientation*, 32 HARV. ENVTL. L. REV. 433, 451 (2008) (citing studies that support the conclusion that CBA routinely results in less stringent regulation in favor of industry); Driesen, *supra* note 244, at 365–66 (reviewing twenty-five cases of CBA and OMB review in rulemaking and finding that OMB suggested changes that weakened regulation in twenty-four cases).

²⁴⁶ *See, e.g.*, Driesen, *supra* note 68, at 80–81 (noting that “CBA will often consign decisions to the largely unchecked discretion of officials or private economists making the policy choices that generate the numbers in the CBA”).

²⁴⁷ *See, e.g.*, FRANK ACKERMAN, POISONED FOR PENNIES: THE ECONOMICS OF TOXICS AND PRECAUTION (2008); FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE

Because the scholarship in this area has thoroughly documented the concerns surrounding CBA, including the serious objections to its application in the context of environmental rulemaking, I need not discuss them in detail here. From the standpoint of environmental justice, the most obvious concern is that CBA does not illuminate the distributional effects of a proposed rule. The objective of CBA is to identify the “most efficient alternative, that is, the alternative that generates the largest net benefits to society (ignoring distributional effects).”²⁴⁸ CBA’s proponents readily concede that it is designed to assess whether a policy option will advance the welfare of society as a whole and cannot provide the information necessary to assess how an option will affect particular groups.²⁴⁹ But as critics have long lamented, because of CBA’s central role in regulatory analysis, distributional effects receive little consideration in the rulemaking process.²⁵⁰ Moreover, even if the costs and benefits to certain populations could be quantified and considered, CBA would still fail to assess fully how a proposed rule would actually affect human lives because it does not require public involvement in specifying the impacts of most importance and it cannot necessarily monetize all these impacts. Because CBA leaves out all of this information, it obscures the ways in which policy choices are morally significant choices.

If the capability approach is applied, as outlined above, it can supply the information that CBA does not. It can identify distributional effects, namely shortfall inequalities in capabilities. Moreover, because it provides a richer informational base, it can capture the range of impacts to human lives. Because communities of concern are involved in the process by which the central capa-

OF EVERYTHING AND THE VALUE OF NOTHING (2004); see also Amy Sinden, *In Defense of Absolutes: Combating the Politics of Power in Environmental Law*, 90 IOWA L. REV. 1405, 1423–30 (2005) (summarizing the methodological and theoretical objections to the monetization of costs and benefits).

²⁴⁸ OMB CIRCULAR A-4, *supra* note 243, at 2.

²⁴⁹ See CASS R. SUNSTEIN, WORST-CASE SCENARIOS 237 (2007) (acknowledging that to know whether we can justify a policy on redistributive grounds, “we need to go beyond CBA and to identify the winners and losers”); MATTHEW D. ADLER & ERIC A. POSNER, NEW FOUNDATIONS OF COST-BENEFIT ANALYSIS 156–57 (2006) (conceding that CBA does not “track” egalitarian values and agencies must use “*decision rules other than CBA*” to incorporate distributive considerations into administrative decision making). As critics have noted, CBA does not simply fail to consider distributional issues; it may, in fact, justify unequal distributions. Because benefits are usually measured in terms of people’s willingness to pay for environmental measures—and the wealthy are willing to pay more than the poor—CBA will justify unequal distribution of environmental hazards, imposing burdens on the poor as a matter of economic logic. See ACKERMAN, POISONED FOR PENNIES: THE ECONOMICS OF TOXICS AND PRECAUTION, *supra* note 247, at 21–22 (explaining how CBA “rationalizes” the unequal distribution of environmental burdens). But see ADLER & POSNER, *supra*, at 157 (noting that CBA could incorporate distributive weights to offset differences in the marginal utility of money based on wealth, but questioning whether this idea is actually feasible).

²⁵⁰ See, e.g., Driesen, *supra* note 244, at 398–99 (arguing that a mandate to employ CBA affects what agencies consider in that it “makes some arguments more important than others” and “some considerations central and others irrelevant”).

bility impacts of a given proposal are identified, the capability perspective is transparent and inclusive (i.e., it does not fail to consider key impacts because they cannot be monetized). And unlike CBA, the capability perspective incorporates people's values and does not commit itself to full order rankings identifying the best option (which, in the case of CBA, would be the "most efficient" option). Because the capability approach can result in partial order rankings, one option may not be clearly better than another. In these situations, the capability approach illuminates an important reality—that the choice among options is a morally significant choice requiring further moral and political deliberation.

As Martha Nussbaum has explained, CBA cannot answer the "tragic question," namely whether any of the options under consideration is morally acceptable.²⁵¹ To answer the tragic question requires a moral theory that identifies the basic entitlements of citizens (e.g., her list of central capabilities); an alternative that violates one of these entitlements would be morally unacceptable and removed from consideration.²⁵² The capability approach to environmental justice that I propose would not only identify violations of central capabilities (e.g., *increasing* the shortfall inequality of a minority population's ability to live a normal lifespan would be a clear violation), but also illuminate the extent to which different options expand or contract different capabilities. In other words, even if all the options are morally *acceptable*, the capability perspective can enable deliberation regarding which option or options are morally *preferable*.

Alkire's study of the three development projects in Pakistan is an example of how the capability approach can complement economic analyses by enriching the information available to decision makers and illuminating the moral significance of choices.²⁵³ She uses both a cost-benefit analysis and a capability analysis to evaluate three Oxfam-funded projects designed to generate income in poor communities: a project that provided women with loans to purchase goats; an educational program designed to further women's literacy and

²⁵¹ Martha C. Nussbaum, *The Costs of Tragedy: Some Moral Limits of Cost-Benefit Analysis*, in *COST-BENEFIT ANALYSIS: LEGAL, ECONOMIC, AND PHILOSOPHICAL PERSPECTIVES* 169, 171 (Matthew D. Adler & Eric A. Posner eds., 2001). Similarly, Catherine O'Neill has emphasized the ways in which CBA obscures moral judgments regarding distributive justice:

Rather than undertake a sober discussion whether we as a society can support these consequences—whether we can tolerate a particular instance of distributive injustice, a particular affront to human dignity or cultural integrity—decisions made by means of cost-benefit analysis are made without reference to who is affected and without reference to what is at stake from their perspective. . . . [C]ost-benefit analysis sanitizes the result, assuring us that "society" is better off, declining even to entertain questions of distribution and generally glossing over the fact that the losers do not actually get compensated (if indeed compensation were possible for what is lost here).

O'Neill, *Risk Avoidance*, *supra* note 124, at 346–47.

²⁵² See Nussbaum, *supra* note 251, at 188.

²⁵³ ALKIRE, *supra* note 188, at 233–87.

ultimately teach income-generating skills; and a rose-cultivation project in which participants generated income by making and selling garlands.²⁵⁴ Using CBA, the goat project is clearly superior to the other projects because it generated the most income relative to its costs. But the result is quite different when the three projects are assessed in terms of their capability impact, that is, in terms of how they expanded or contracted the capabilities identified by program participants. For example, although the literacy project did not generate significant income, it had the strongest impact on capabilities in the dimensions of empowerment and knowledge, “intangible benefits” not considered in the cost-benefit analysis.²⁵⁵ Indeed, based on the capability analyses, the three projects cannot be ranked; choosing among them is therefore a “morally significant choice” because it is a choice to prefer one value over another (economic efficiency vs. women’s empowerment).²⁵⁶

This added informational perspective is essential if we are to take environmental justice seriously in the rulemaking process. The OMB circular somewhat begrudgingly acknowledges that the Executive Order on regulatory analysis requires agencies to consider distributive effects:

Your regulatory analysis should provide a separate description of distributional effects (i.e., how both benefits and costs are distributed among sub-populations of particular concern) so that decision makers can properly consider them along with the effects on economic efficiency. . . . Where distributive effects are thought to be important, the effects of various regulatory alternatives should be described quantitatively to the extent possible, including the magnitude, likelihood, and severity of impacts on particular groups.²⁵⁷

Of course, the approach contemplated in the circular is one in which distributive impacts are monetized and integrated into the cost-benefit analysis. But as Alkire’s study demonstrates, even if some costs and benefits can be monetized or otherwise quantified, these numbers will not fully reflect the positive and negative impacts to vulnerable populations. For example, capability impacts, such as increased or decreased access to information regarding one’s environment, may evade quantification. In current regulatory analyses, these kinds of intangible benefits are given scant attention, even though they may under-

²⁵⁴ *Id.* at 235, 256, 272–73.

²⁵⁵ *Id.* at 286. Alkire acknowledges that these benefits might in theory be reduced to monetary values, but in addition to being arbitrary, the valuation “seems to obscure rather than clarify the question of whether or not capabilities have expanded, because if benefits are priced and aggregated then information about what these benefits *were* is lost, and might only be represented by a total sum.” *Id.* at 255. In short, the qualitative description of these benefits is essential.

²⁵⁶ *Id.* at 286.

²⁵⁷ OMB CIRCULAR A-4, *supra* note 243, at 14.

mine the reliability of the cost-benefit comparisons at the center of the analysis.²⁵⁸ As the EPA's recent environmental justice guidance and action plan recognize, we need more than the open-ended requirements found in executive orders if environmental justice is to receive serious consideration; we need a theoretical framework that can generate processes by which inequalities are systematically identified and addressed.

Capability impact analysis fills this need because it can ensure that rules are assessed not only in terms of efficiency, but also in terms of human impacts. If, for example, a capability impact analysis of vulnerable groups had been conducted as part of the EPA's rulemaking process for the 2008 DSW rule, it likely would have identified impacts to capabilities in the dimensions of knowledge and empowerment. The rule excludes large amounts of hazardous material from stringent regulation under subtitle C of RCRA.²⁵⁹ As a result, some facilities managing hazardous material no longer require a RCRA permit. Without the permit requirement, regulatory authorities and facilities do not have to consider public input or facilitate public participation, and individuals lose the ability to influence whether and how facilities operate in their communities.²⁶⁰

In addition, facilities claiming the exclusion are no longer subject to the RCRA requirement that hazardous waste generators and treatment, storage or disposal facilities ("TSDFs") report biennially to the EPA.²⁶¹ The 2008 DSW rule only requires that facilities notify the EPA biennially of their intent to operate under a DSW exclusion and does not require that facilities report the detailed information on waste generation, management, and transport required under the hazardous waste reporting requirements.²⁶² Consequently, individuals, and particularly those in low-income and minority communities where hazardous waste facilities are disproportionately located, will not be able to access important

²⁵⁸ See Wagner, *supra* note 73, at 64–65. Wagner notes that “when a good portion of the benefits are unquantifiable, prominent economists maintain that cost-benefit analysis is no longer appropriate.” *Id.* at 65.

²⁵⁹ DSW Rule, 73 Fed. Reg. at 64,668 (2008).

²⁶⁰ The EPA's recent environmental justice analysis of the 2008 DSW rule identifies the negative impact that the 2008 rule has on public participation. See Definition of Solid Waste, 76 Fed. Reg. 44,094-01, 44,106 (July 22, 2011) (“[B]y removing the RCRA permitting requirement for facilities that manage excluded hazardous secondary materials, the 2008 DSW final rule also removed one of the key provisions for allowing communities to participate in the regulatory process (at least as it concerns the management of the hazardous secondary materials excluded under the rule).”).

²⁶¹ RCRA §§ 3002, 3004, 42 U.S.C. §§ 6922(a), 6924(a); 40 C.F.R. §§ 262.41–.43, 264.75–.77 (2009).

²⁶² Notification Requirement for Hazardous Secondary Materials, 40 C.F.R. § 260.42 (2009). For a summary of notifications through January 12, 2010, see EPA, DRAFT EJ METHODOLOGY, *supra* note 10, at app. C. The recently proposed revisions to the DSW rule do not completely cure these deficiencies. The proposed revisions continue to exclude some hazardous material from subtitle C regulation; facilities operating under these exclusions are not required to acquire RCRA permits and are subject only to notification requirements. Definition of Solid Waste, 76 Fed. Reg. at 44,106.

information about the hazardous material subject to the DSW exclusions. Individuals engaged in the iterative, participatory process described above would likely identify these restrictions on their ability to access information and participate in siting decisions as a negative impact on their well-being in addition to the more obvious impacts to health and peace of mind that would occur if deregulation actually increases the risk of environmental and human exposure to hazardous materials.²⁶³

2. Critique of Current Methodologies: The EPA's Proposed Coal Ash Rule

The capability approach can also be used to critique current practices and methods of evaluation by highlighting information a particular methodology fails to take into account and asking how this information might influence ultimate conclusions.²⁶⁴ In this final section, I examine the environmental justice analysis conducted by the EPA in its regulatory impact analysis ("RIA") of its proposals to regulate coal combustion residuals ("CCRs"), often referred to as coal ash.²⁶⁵ The very fact that the EPA conducted such an analysis and included it in the RIA is a notable improvement over past practices. In the past, environmental justice has been given cursory mention in the RIA, rather than analysis. But with the Agency's renewed commitment to environmental justice, we can move beyond calls to incorporate it into rulemaking to actual discussions about how best to do so.

The proposed CCR regulation is an apropos focus for such a discussion given its potential environmental justice implications. CCRs, such as fly ash and boiler slag, are residues produced during the combustion of coal at electric utilities and independent power producers.²⁶⁶ Currently, they are disposed of in landfills or—in liquid or slurry form—in surface impoundments, which the proposed regulation defines as "a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials."²⁶⁷ CCRs contain a number of contaminants, such as lead, arsenic, mercury and other toxic metals,

²⁶³ The concern that deregulation will increase the risk of improper storage and disposal of hazardous material is the principal objection of environmental groups. See EPA, DRAFT EJ METHODOLOGY, *supra* n. 10.

²⁶⁴ See Robeyns, *Capability Approach in Practice*, *supra* note 170, at 369 (describing her own work "question[ing] whether some success stories of economic globalisation remain positive if one looks beyond increases in personal incomes and GNP per capita, and instead takes social and psychological functionings into account").

²⁶⁵ Disposal of Coal Combustion Residuals from Electric Utilities, 75 Fed. Reg. 35,128 (proposed June 21, 2010) (to be codified at 40 C.F.R. pts. 257, 261, 264, 265, 268, 271, 302) [hereinafter CCR Rule].

²⁶⁶ *Id.*

²⁶⁷ *Id.* at 35,130.

that pose risks to human health and the environment.²⁶⁸ Without proper controls, people can be exposed to these contaminants through the air or as they leach into groundwater and travel overland via erosion and runoff.²⁶⁹ Improper management of CCRs can also result in catastrophic releases, such as the massive spill of fly ash that occurred in December 2008 at the Tennessee Valley Authority (“TVA”) Fossil Plant in Kingston, Tennessee, when a surface impoundment failed and 5.4 million cubic yards of fly ash sludge spread over 300 acres, eventually spilling into a branch of the Emory River.²⁷⁰ In addition to environmental damage to the river and surrounding water and land, the spill “disrupted power, ruptured a gas line, knocked one home off its foundation and damaged others.”²⁷¹

To address these health and environmental risks, the EPA proposed two options: (1) regulation of CCRs disposed of in landfills and surface impoundments as “special wastes” under subtitle C of RCRA and (2) less stringent regulation of these CCRs according to national minimum criteria under subtitle D of RCRA.²⁷² Under option one, CCRs would be subject to regulation from generation to disposal (i.e., generally subject to the cradle-to-grave requirements for hazardous wastes under subtitle C), and facilities treating, storing, and disposing of CCRs would need to obtain permits.²⁷³ In contrast, under option two, the

²⁶⁸ The EPA has identified the following metals present in CCRs: “antimony, arsenic, barium, beryllium, cadmium, hexavalent chromium, lead, mercury, nickel, selenium, silver, and thallium.” *Id.* at 35,168. The agency concluded that these metals are “capable of posing a substantial present or potential hazard to human health and the environment when improperly treated, stored, transported, disposed of, or otherwise managed.” *Id.*

²⁶⁹ The exposure pathways evaluated by the EPA are groundwater ingestion and air inhalation by nearby residents and fish consumption by recreational fishers. *Id.* at 35,168.

²⁷⁰ *Id.* at 35,147; see also U.S. ENVTL. PROT. AGENCY, QUARTERLY FACT SHEET: TVA KINGSTON FLY ASH RELEASE SITE, HARRIMAN, ROANE COUNTY, TENNESSEE (2010) (containing a site history and recent information about the progress of cleanup efforts supervised by the EPA), available

at <http://epakingstontva.com/Fact%20Sheets%20%20Documents/EPA%20Quarterly%20Factsheets/Q1%20-%20Q4%202010%20Factsheets/Final%20Q4%20Factsheet%20for%20July%202010.pdf> Prompted by this disaster, the EPA sought to identify the locations of existing surface impoundments. Out of the 431 units identified, the EPA assigned a “high hazard potential rating” to 49 sites; this rating is an indication that a structural failure of an impoundment will likely result in loss of human life. U.S. ENVTL. PROT. AGENCY, FACT SHEET: COAL COMBUSTION RESIDUES (CCR)—SURFACE IMPOUNDMENTS WITH HIGH HAZARD POTENTIAL RATINGS (Aug. 2009), available at <http://www.epa.gov/epawaste/nonhaz/industrial/special/fossil/ccrs-fs/index.htm>.

²⁷¹ CCR Rule, 75 Fed. Reg. at 35,147.

²⁷² The EPA also considered a modified (weaker) version of the second option. For summaries of the options, see the CCR Rule, 75 Fed. Reg. at 35,133–34. The EPA is proposing that CCRs be designated as “special wastes,” rather than “hazardous wastes,” in order to address the concern raised by industry that regulation as a hazardous waste will stigmatize their beneficial reuse. *Id.* at 35,185–87. In addition to environmental groups and scholars, the EPA itself questions this claim, noting that the increased cost to dispose of CCRs in accordance with subtitle C should provide an economic incentive for unregulated, less costly beneficial uses. *Id.* at 35,185.

²⁷³ *Id.* at 35,133; 35,135.

EPA would establish national minimum criteria under subtitle D for surface impoundments and landfills, but would not regulate the generation, treatment, or storage of CCRs prior to disposal.²⁷⁴ In addition, under subtitle D, permits would not be required and the EPA could not enforce the requirements; enforcement would be left to citizens and states under RCRA's citizen-suit authority.²⁷⁵ Furthermore, if regulated under subtitle C, the practice of disposing of CCRs in liquid or slurry form in surface impoundments would effectively cease due to applicable treatment standards, which would require "dewatering" of CCRs and result in dry disposal in landfills.²⁷⁶ Under subtitle D, the disposal of CCRs in surface impoundments could continue if impoundments meet certain design requirements, including the installation of liner systems.²⁷⁷ Regulation under subtitle C is clearly more protective of the environment and public health. Not surprisingly, environmental groups favor more stringent regulation under subtitle C, while industry and many states have pressed for regulation under subtitle D.

The RIA's environmental justice analysis of the proposed regulation consists primarily of a demographic analysis of the areas surrounding the 495 electric utilities potentially affected by the regulation.²⁷⁸ The main objective of the analysis is to "compare minority and low-income population data for each electric utility plant location, to respective statewide [and nationwide] population data, to identify whether these two population subgroups disproportionately reside in geographic areas where electric utility plants are located."²⁷⁹ Using census data on minority and low-income populations based on zip code tabulation areas, the EPA compared the low-income and minority populations surrounding utility plants to statewide averages of these subgroups.²⁸⁰ The Agency also aggregated the plant-level data to make comparisons at the state and national levels.²⁸¹

²⁷⁴ *Id.* at 35,133–34; 35,136.

²⁷⁵ *Id.* at 35,136.

²⁷⁶ *Id.* at 35,180; 35,202.

²⁷⁷ *Id.* at 35,202.

²⁷⁸ U.S. ENVTL. PROT. AGENCY, REGULATORY IMPACT ANALYSIS FOR EPA'S PROPOSED RCRA REGULATION OF COAL COMBUSTION RESIDUES (CCR) GENERATED BY THE ELECTRIC UTILITY INDUSTRY 216–28 (Apr. 30, 2010) [hereinafter CCR RIA]. The EPA gathered population (census) data for 464 (94%) of the utilities and "extrapolated" the data to all 495 utilities. CCR Rule, 75 Fed. Reg. at 35,229.

²⁷⁹ CCR RIA, *supra* note 278, at 216. The analysis also contains a qualitative discussion of the subtitle C option's potential to cause an increase in off-site disposal of CCRs in hazardous waste landfills, recognizing that such an increase would disproportionately affect low-income and minority populations given the well-documented location of such landfills.

²⁸⁰ *Id.* at 217; CCR Rule, 75 Fed. Reg. at 35,229.

²⁸¹ CCR RIA, *supra* note 278, at 219–223; CCR Rule, 75 Fed. Reg. at 35,229–30.

Overall, the comparisons indicate that electric utilities are located in areas with slightly higher low-income populations and *lower* minority populations.²⁸² This finding led the EPA to the following conclusion:

These demographic data comparisons indicate that the current (baseline) environmental and human health hazards and risks from electric utility CCR disposal units, and the expected future effects (*i.e.*, benefits and costs) of the regulatory options described in today's co-proposal may have a disproportionately lower effect on minority populations and may have a disproportionately higher effect on low-income populations.²⁸³

In other words, many environmental justice communities are not disproportionately affected by CCR surface impoundments, and the case for increased regulation is therefore not notably strengthened by analyzing it from an environmental justice perspective.

But is this the correct conclusion? Even if we accept the methodology used to collect and analyze the demographic data, what do these numbers actually tell us about the impact of different policy options on the lives of vulnerable populations? An environmental justice analysis grounded in the capability perspective would likely lead to a less positive assessment of the status quo. A catastrophic spill would more seriously affect environmental justice populations, as the aftermaths of Hurricane Katrina and the Deepwater Horizon oil spill demonstrate, because these populations may be, for example, less mobile and therefore less able to avoid exposure. Hence, the risks posed by surface impoundments may be disproportionately distributed even if a catastrophe never occurs.

Moreover, the risks posed by exposure to toxic metals, such as arsenic and lead, may be greater for these populations because of the additive and cumulative effects of exposure to multiple chemicals and sources of pollution. Although the EPA's probabilistic risk assessment addressed variability in human exposure by using statistical distributions, the EPA's exposure modeling is based on "default assumptions concerning population activity patterns, mobility, dietary habits, body weights, and other factors."²⁸⁴ In addition, exposure data are often uncertain. In this case, the EPA used a Maine study of fish consumption rates by anglers, which it admitted may under- or over-estimate fish consumption rates at relevant sites.²⁸⁵ Indeed, as discussed in previous sections, the exposure of vulnerable populations may be greater as a result of higher levels of fish consumption. Furthermore, because the risk of each toxic chemical is con-

²⁸² CCR RIA, *supra* note 278, at 226; CCR Rule, 75 Fed. Reg. at 35,229–30.

²⁸³ CCR Rule, 75 Fed. Reg. at 35,230.

²⁸⁴ U.S. ENVTL. PROT. AGENCY, HUMAN AND ECOLOGICAL RISK ASSESSMENT OF COAL COMBUSTION WASTES § 4, at 53 (Apr. 2010) (draft).

²⁸⁵ *Id.* § 4, at 54.

sidered separately, cumulative and synergistic risks from multiple chemicals were not considered, although the risk assessment acknowledges that exposure to multiple chemicals is “highly likely.”²⁸⁶

What this demonstrates is that when we focus on human impacts, rather than the distribution of electric utilities, the environmental justice analysis may provide support for the stronger regulatory option. Focusing on actual lives, rather than “things,” enriches the analysis. If one surface impoundment fails, low-income and minority individuals are more likely to suffer serious and prolonged harm. If groundwater or air is contaminated, the health impacts will likely be greater due to exposure to multiple stressors and economic and social vulnerabilities, such as inadequate health care. Focusing on the distribution of a particular facility or pollution source will not capture all we need to know to assess these potential impacts.

Moreover, the language of environmental justice contained in Executive Order 12,898 and the EPA’s policy documents does not require the approach used for the CCR rule. Identifying and addressing “disproportionately high and adverse human health and environmental effects”²⁸⁷ does not first require statistical proof that pollution sources are disproportionately located in low-income and minority communities. The Executive Order does require, when possible, the collection and analysis of demographic data for areas surrounding facilities or sites “expected to have substantial environmental, human health, or economic effects on the surrounding populations” when these facilities or sites are the subject of substantial administrative action.²⁸⁸ But although this data may be useful, it is not all we need to know—and the Executive Order does not suggest that it is all we need to do.

Furthermore, as the environmental justice analysis for the CCR rule demonstrates, if we rely on this demographic data, we may overlook important concerns. Even if pollution sources are not disproportionately located in minority and low-income communities, environmental justice concerns may neverthe-

²⁸⁶ *Id.* § 4, at 45. Although the environmental justice analysis for the 2008 DSW rule is primarily a demographic analysis, it does recognize that cumulative effects from multiple stressors can exacerbate the disproportionate impacts identified by the demographic analysis. Definition of Solid Waste, 76 Fed. Reg. 44,094-01, 44,107 (July 22, 2011). In addition, the EPA compiled data on multiple stressors and other factors that affect vulnerability in the communities surrounding the forty facilities that have notified that they are operating under an exclusion created by the 2008 DSW rule. This data provided further support for the EPA’s conclusion that the 2008 DSW rule may have adverse and disproportionate impacts on minority and low-income populations. See Definition of Solid Waste, 76 Fed. Reg. at 44,106–07 (citing U.S. ENVTL. PROT. AGENCY, ENVIRONMENTAL JUSTICE ANALYSIS OF THE DEFINITION OF SOLID WASTE RULE, § 5.2, table 5.1 (June 30, 2011) (draft for public comment)). By analyzing factors that affect vulnerability, the EPA’s analysis of the 2008 DSW rule moves closer to a capability impact analysis. This is an important addition to the Agency’s environmental justice methodology and one that the Agency should continue to strengthen and develop in evaluating future policies.

²⁸⁷ Exec. Order No. 12,898, § 1-101, 59 Fed. Reg. 7629 (Feb. 11, 1994), *as amended* by Exec. Order No. 12,948, 60 Fed. Reg. 6381 (Feb. 1, 1995).

²⁸⁸ *Id.* § 3-302(b).

less exist. As we have seen, equal exposure to particular environmental hazards does not necessarily lead to equal distribution of environmental and health consequences because social vulnerabilities connected to race and class increase the likelihood that environmental risks and hazards will result in unequal outcomes. Robert Verchick makes this point in the context of disaster justice:

Imagine requiring that only vulnerable communities with unequal risk of direct *exposure* be given special thought in the planning process. That policy would do nothing for the wheelchair-bound grandfather on a fixed income whose healthy neighbors (with a car in the garage) are also exposed to the risk of flood.²⁸⁹

To address this potential problem, he argues for an executive order on disaster justice that would require agencies to address disproportionate *or* serious adverse effects on vulnerable populations.²⁹⁰

But we may not need a new order or new language to empower agencies to address what Verchick calls “serious adverse effects.”²⁹¹ Rather, we need only shift our focus from things to people—from the distribution of environmental goods and bads to how these goods and bads affect actual lives—to uncover the disproportionate impacts that some individuals suffer. Indeed, given the substantial evidence that environmental risks and hazards disproportionately affect the well-being of low-income and minority individuals, the EPA and other agencies may be able to justify an environmental justice assumption in the context of some rulemakings.²⁹² The environmental justice analysis would then begin not with the question of *where* pollution sources are located, but with the question of *how* these sources affect vulnerable populations.

V. CONCLUSION

As a result of many years of advocacy by activists and scholars, we can finally move beyond debates regarding the existence of environmental injustice to productive discussions regarding what law and policy can do to address the

²⁸⁹ VERCHICK, *supra* note 157, at 174–5.

²⁹⁰ *Id.* at 173–77.

²⁹¹ *Id.* at 73. In its recent guidance on environmental justice in rulemaking, the EPA interprets its statutory authority in a way that supports this approach. The EPA emphasizes the Agency’s broad discretion under environmental statutes to consider health and environmental impacts on certain populations without demonstrating that they are disproportionate and concludes that “consistent with its mission, the Agency may address adverse impacts in the context of developing an action without the need for showing that the impacts are disproportionate.” EPA, INTERIM EJ GUIDANCE, *supra* note 13, at 5.

²⁹² See *Natural Res. Def. Council, Inc. v. Herrington*, 768 F.2d 1355, 1420–21 n.63 (D.C. Cir. 1985) (noting that an agency must produce “substantial evidence for its major assumptions in a rulemaking”).

injustice. The EPA's recently released interim guidance on environmental justice will encourage rulemakers to consider environmental injustice during the rulemaking process, but it does not help rulemakers assess, or evaluate, these injustices. To evaluate environmental inequalities so that policies may better address them, we must adopt an approach that ensures we consider the most important information—that is, information regarding the ways in which vulnerable populations actually experience environmental injustice. The geographic distribution of pollution sources and other environmental hazards is relevant, but it is not the entire story. To understand the impact of environmental policies and practices on human lives, we must shift our focus from things to people. By focusing on the opportunities people actually have to achieve good health, community involvement, and other valuable functionings, the capability approach to environmental rulemaking can ensure we see the real-world impacts of environmental burdens, leading to better policy choices and more just environmental rules.

