3

Climate Change Worldviews and the Scale of Environmental Justice

MICHAEL MÉNDEZ

California has provided a test case over the last twenty years, showing other governments how disparate interest groups – environmental justice activists, lobbyists, industry, labor unions, policymakers, and scientists – can collaborate and stabilize comprehensive climate action policies (Méndez 2020; Rabe 2009).[1] Such negotiations can be contentious, in part because participants' ideas of what climate change solutions should entail are often shaped by unspoken worldviews (the social, political, and cultural attitudes toward the world that orient people's actions). These differences in worldview, if unacknowledged, can lead to the breakdown of trust among groups that are nominally working toward the same goal: reducing the harm that climate change will do to human societies and our planet (Ballew et al. 2019: 3; Hoffman 2015). Nonetheless, confrontations and collaborations between groups with differing worldviews have the potential to reshape environmental governance and power relations in society. During my senior policy roles in California (2003–2023), I witnessed and analyzed the effects of incompatible worldviews, as they played out in the conduct of climate change politics.[2] This chapter outlines the two most salient worldviews, arguing that the gulf between them could only be bridged when action was *repoliticized* to include multiple scales, ensuring climate change solutions tackle both the global problem and local needs.[3]

According to the political scientist Michael Lind (2011),

> a worldview is a coherent understanding of the nature of reality, which permits its holders to interpret new information in light of their preconceptions. Clashes among worldviews cannot be ended by a simple appeal to facts. Even if rival sides agree on the facts, people may disagree on conclusions because of their different premises.

[1] The US Environmental Protection Agency (2012) has conceptually defined "environmental justice" as the "fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."

[2] Méndez previously served in California as a senior consultant, lobbyist, and gubernatorial appointee during the passage of the state's internationally acclaimed climate change legislation.

[3] Material in this chapter has been adapted from Méndez (2020).

https://doi.org/10.1017/9781009352444.004 Published online by Cambridge University Press

Lind argues that this is why politicians often seem to speak past one another or ascribe different meanings to the same events. In this sense, a worldview can include ideas about nature, values, emotions, and ethics (Ballew et al. 2019). Climate change worldviews can be placed on a spectrum between two opposing positions, which I refer to as "carbon reductionism" and "climate change from the streets." What follows is a generalization of the dynamics I observed during the initial years (2006–2012) of implementation of California's climate change policies. While the perspectives of particular people and organizations were always more complex than these categories may suggest, they are nonetheless useful in developing a sense of the sources of misunderstanding, disagreement, and fracture that can hamper public discussion of such policies, as well as some of the strategies that allow differing worldviews to be brought into creative tension and stabilized (Hulme 2007, 2010).

The case of California is particularly productive in this regard. As the world's fourth-largest economy and the only US state to implement a comprehensive program of regulatory and market-based mechanisms to reduce greenhouse gas emissions, California has consistently been at the forefront of broader national and global environmental experimentation (Stone 2012). The state's cap-and-trade program – a central, market-based mechanism for ensuring emissions reductions – is the third largest in the world, after those of the European Union and China (CARB 2018). This program has been especially contentious in debates within California; supporters emphasize its global reach and cost-effectiveness, and detractors criticize its inequitable effects on specific local communities and demographic groups. California's prominence in climate change policy makes it an ideal place to investigate the dynamics of such disputes, and their roots in differing climate change worldviews (London et al. 2013).

What I refer to as carbon reductionism was broadly based on utilitarianism – efforts to develop climate change policy that would deliver the "greatest good for the greatest number." Utilitarianism is an ethical theory which states that the best action is the one that maximizes utility for the greatest number of people in society (Bentham 2007). This worldview tends to be associated with regulators, traditional environmentalists, climate scientists, multinational corporations, and global bodies such as the United Nations. Carbon reductionism reflects an adherence to cost-effectiveness and market-based solutions (i.e. cap-and-trade), focused on reducing global greenhouse gas emissions. It is argued that although emissions of greenhouse gases and local pollutants may be correlated, greenhouse gas mitigation efforts should not be required to reduce local pollution. These are seen as fundamentally different problems that are best addressed separately. "Carbon reductionism" thus literally refers to stakeholders' desire to reduce carbon dioxide emissions (the most prevalent greenhouse gas) while simultaneously emphasizing

the reductive logic embedded in this approach. Under this perspective, climate change policies are judged on whether they are economically advantageous and benefit the majority. While traditional environmentalists use a market logic in hopes of creating climate policy that can be replicated elsewhere, many businesses are in favor of a limited focus because it minimizes government intervention and supports risk management and corporate strategies that lessen the financial burden of mitigation efforts (Cushing et al. 2018). In this respect, carbon reductionism is similar to the pursuit of "stability" in the climate policymaking process, which often seeks the durability of programs, ultimately to the benefit of powerful interest groups.

Environmental justice groups, in contrast, generally emphasize moral rights, which leads them to a critical reevaluation of both the practice and the politics of reducing carbon emissions. One result is a refusal to uncouple the global effects of greenhouse gases from the local health effects of other pollutants that are emitted with them. The environmental justice movement originated in civil rights campaigns that worked to expose the socially uneven impacts of industrialization on low-income communities of color, and its focus remains on race, class, and the distribution of environmental hazards (London et al. 2013). Shaped by this history of activism, the worldview I refer to as "climate change from the streets" prioritizes equity and justice; from this perspective, the utilitarian approach often ignores distinctions between people and the disproportionate impacts of climate change on low-income communities of color. Climate change solutions are evaluated on their ability to address environmental disparities and prioritize communities living near polluting sources (Bullard 2000; Méndez 2020).

Environmental justice groups that support climate change from the streets legitimize knowledge based on lived experience within their communities and promote participatory, embodied, and experimental methods in the development of climate change policy. In contrast to carbon reductionism's focus on incremental greenhouse gas reductions within an existing economic framework, they are more willing to consider aggressive policies to reduce emissions and transition away from a fossil fuel economy. In climate change policy debates, environmental justice advocates are apprehensive about market-based solutions because they see them as serving those with wealth and power, rather than the disadvantaged (Kaswan 2018: 492; Schlosberg and Collins 2014: 364). For them, the main threat (their risk perception) from climate change is the disproportionate harm that it causes to health in their communities, including increased illnesses, injuries, and deaths from extreme events such as hurricanes and wildfires, or respiratory illnesses caused by degraded air quality that is further worsened by prolonged droughts and wildfires (Méndez 2020). This insight leads them to view climate change as an embodied phenomenon that affects people's daily lives in multiple ways. Therefore, the main

argument of activists is that environmental protection and improving human health are inextricably linked, and maintaining that link is key to advancing future climate action policies (Krieger 2005). In essence, activists seek the *repoliticization* of climate policymaking to bring processes back into explicitly political arenas, as a method to expose existing power relations, and to make conflicts of power and interest apparent.

In what follows, I describe the general characteristics that distinguish carbon reductionism and climate change from the streets, pointing out the sources of tension between the two. Through this synthesis, we can see that responses to climate change are components of larger social, political, and environmental dynamics that combine to shape individuals' ideas about fairness and justice, and the role the government should play in enacting solutions. Understanding this larger picture, and examining often unspoken assumptions, allows us to reflect on how common ground can be deliberately negotiated between these positions – in particular, how environmental justice and public health can meaningfully be integrated into climate change policy. Practices that bridge between the scales that these two worldviews prioritize – the global and the local – can generate solutions that are truly innovative and work toward both climate change goals and social equity.

3.1 Carbon Reductionism

As public concern over the changing climate grows, governments and scientists are focusing more on its chief cause: global greenhouse gas emissions. This focus results in climate change policy with the specific goal of reducing seven emissions, rather than parallel policy goals. The seven gases have been identified by the Kyoto Protocol and California's Global Warming Solutions Act of 2006 – the state's main enabling legislation for its suite of regulatory programs (CARB 2008; IPCC 2014). Greenhouse gas emissions have "no direct public health impacts" since they are global pollutants that mix uniformly in the atmosphere; they do not have localized effects like particulate matter and nitrogen oxides (CARB 2008). Evidence of observed climate change impacts, moreover, is reported as strongest and most comprehensive for natural systems, a finding that is often used to justify a focus on biophysical rather than social systems (IPCC 2014).

Greenhouse gases and local air pollutants such as particulate matter and nitrogen oxides (precursors of smog) are often emitted concurrently from processes such as fossil fuel burning. But within the carbon reductionist framework, the most scientifically rigorous and cost-effective method to address climate change is understood to require a strict delineation between global and local scales (Cushing et al. 2018). Carbon dioxide (CO_2) holds a privileged position, since it is the most abundant anthropogenic greenhouse gas that contributes to global warming and persists in

the atmosphere for many years. To quantify and monitor greenhouse gases, climate analysts convert the gas levels to a "CO_2 equivalent." The CO_2 equivalency of any given gas is calculated by multiplying its mass by the "global warming potential," which indicates the equivalent greenhouse effect of a pound, or metric ton, of the gas as compared to a pound, or metric ton, of CO_2 (CARB 2008).

Calculations centered on CO_2 equivalency and global warming potential are often linked with a view of nature that focuses on ideas such as biodiversity, ecological integrity, and natural systems. The ambitions of this type of climate change governance are often stated in quantitative terms, such as achieving carbon reduction targets, preventing dangerous anthropogenic interference with the climate system, and limiting the average global surface temperature increase. Given the assumption that climate change should be understood and addressed at the global scale, these ideas provide crucial tools for detecting its progress, measuring its causes and effects, and quantifying the changes necessary to human behavior to avoid catastrophe for our species and planet. Nonetheless, if used exclusively in public discourse, they can create an abstraction of nature and limit other types of knowledge about the changing climate, including environmental justice perspectives (Hull 2006: 4–5). These conceptual structures, moreover, narrow the focus of climate change measures to reducing greenhouse gas emissions, regardless of place or scale. Since climate change is a global issue, and greenhouse gases are global pollutants, it is argued, specific locations for reducing emissions do not matter, as long as reduction targets are achieved. However, if greenhouse gas reductions are coupled with reductions in other associated pollutants, location becomes significant for communities near major polluting sources like oil refineries. As these associated pollutants have direct and immediate health effects, focusing on the distribution of health benefits from local air quality improvements could increase public support for climate change policy (Cushing et al. 2018).

Second, carbon reductionism requires that climate change policy be supported by a community of scientific experts, whose knowledge is considered to be definitive. Under such an approach, dispassionate experts advise policymakers of objective truths, after which policymakers factor in social or political considerations. This process implies a linear approach in which scientific facts inform policy, and scientific inquiry is understood to be independent of society, politics, and values. This separation of science from politics results in policymaking that is seen as evidence-based and rational but can also be perceived as exclusionary, since only experts' knowledge and perspectives are valued (Ezrahi 1990; Jasanoff 2005). For example, when the scoping plan (a proposed framework for achieving greenhouse gas reduction targets) was adopted in 2008, the entire membership of the California Air Resources Board and its executive staff was white – and presumably did not share similar histories of environmental racism as activists. By 2011, when

cap-and-trade was approved, the board's racial composition included one African American board member and one Asian American on its executive staff. Through the Global Warming Solutions Act's implementation, we see how leadership in climate change policy can be highly homogeneous in terms of race, gender, and class.

The third characteristic of carbon reductionism is the assertion that appropriate action on climate change requires an array of measures to capture the maximum technologically feasible and "cost-effective" emissions reduction opportunities wherever possible. The Global Warming Solutions Act defines the measure of cost-effectiveness as the "cost per unit of reduced emissions of greenhouse gases adjusted for its global warming potential" (California Health and Safety Code, §38505(d), §38560, §38561). The concept of cost-effectiveness, as applied to the reduction of carbon emissions, requires policymakers to judge the distribution of costs associated with implementing a climate change policy and account for any trade-offs. Attaining cost-effectiveness, however, does not fully allow the specification of where emissions abatement will take place. This raises broad questions: How do different climate policies affect the distribution of costs, benefits, and consequences? And how are these effects experienced across scales and demographic groups? Therefore, what seems like cost-effective policy from a carbon reductionist standpoint could appear to reproduce long-term injustices when viewed from the streets, since it might ignore, reinforce, or potentially worsen existing environmental and health disparities (Parks 2009).

Fourth, cost-effectiveness is often achieved through market-based mechanisms (such as cap-and-trade). This approach is utilized for large industrial emitters, such as electrical generation, manufacturing, cement production, and oil and gas production and supply. According to carbon reductionist logic, incentivizing mitigation and allowing regulated entities flexibility in deciding how and where best to meet reductions targets spurs market innovation and drives new technologies to higher volumes and lower prices (CARB 2014: 104). The cap-and-trade program accounts for less than one-third of the state's total mitigation measures, but it remains a central concern for environmental justice groups. The industrial sector's obligations to greenhouse gas reductions are achieved mainly through its compliance under the program, rather than reducing emissions directly, which activists argue would improve local air quality around polluting industrial facilities (Nachbaur et al. 2012).

The fifth characteristic of carbon reductionism is the geographic neutrality of its policy interventions. In shaping California's Global Warming Solutions Act, policymakers narrowed climate change measures to directly address greenhouse gas reductions across polluting sources, regardless of place or scale. State policymakers view California as a member of the global community and envision its policies to be part of a larger domestic and international system. The state has strategically

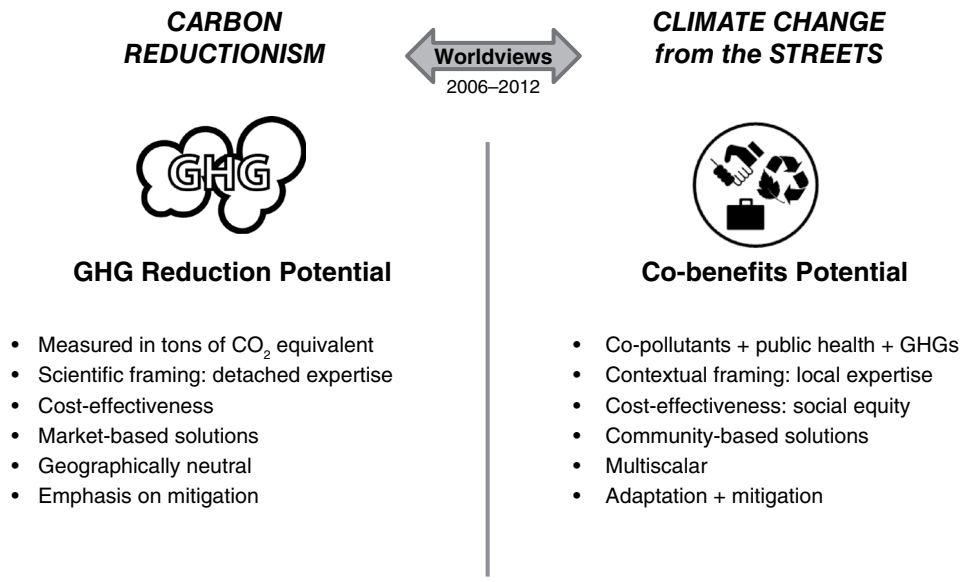

Figure 3.1 Tension between California's climate change worldviews.

chosen to move away from a "parochial" or neighborhood-level scale – even if attention to local conditions would result in the direct reduction of associated, harmful pollutants (CARB 2008).

The last defining characteristic of carbon reductionism is its main focus on mitigation. California's mitigation measures are intended to slow the emissions rate for human-caused greenhouse gases to avoid further disruptions to the earth's atmosphere. As adopted in 2006, the Global Warming Solutions Act did not initially include local adaptation measures. The goal of adaptation measures is to protect lives, health, property, and ecosystems from actual or anticipated climate change impacts, such as heat waves, droughts, wildfires, and flooding. Put another way, mitigation can be viewed as activities that protect "nature from society," whereas adaptation involves ways of "protecting society from nature" (ICELI 2009; Park 2009). Although robust adaptation strategies were developed in later years, early strategies were directed toward protecting hard assets such as vital infrastructure or ecological systems – not neighborhoods and socially vulnerable populations (Figure 3.1; Méndez 2015, 2016).

3.2 Climate Change from the Streets

Carbon reductionism may be the dominant climate change policy paradigm, but California environmental justice advocates are pushing forward an alternative. "Climate change from the streets" is a form of repoliticization that challenges the

https://doi.org/10.1017/9781009352444.004 Published online by Cambridge University Press

established policy practices of carbon reductionism by embedding justice and public health goals within climate change science and solutions. It shifts the focus of policies from the degradation of "nature" to address the simultaneous degradation of communities and asymmetries in the policymaking process. Environmental justice advocates know and analyze the effects of climate change through people's histories, culture, and embodied knowledge rather than solely through data gathered by experts and policy implemented by regulatory agencies (Park 2009).

In an effort to challenge the prevalence of carbon reductionism in climate change policy and action, environmental justice advocates have developed a community-based framework for addressing local and global environmental health impacts. Through this framework, they are demanding a greater role in the decision-making processes that impact their lives. They are debating not only the relationship between political power and climate expertise but also the efficacy of solutions to produce positive social change (Corburn 2005). This approach acknowledges how climate change is connected with other types of knowledge about the environment and enables different ways of knowing to play a valid part in framing policy responses. In climate change from the streets, individuals and groups with a range of competing interests work together to develop climate change policy and enact environmental justice (Méndez 2020).

The first characteristic that I attribute to climate change from the streets is that it emphasizes the need for climate change policies that yield substantial health benefits through the reduction of other pollutants that are commonly emitted alongside carbon dioxide. Environmental justice groups reference valuation studies that suggest that the value of such health benefits may be comparable in magnitude to that of reduced carbon emissions. They recommend that policymakers directly compare the cost of climate change actions with the economic value of their benefits, in terms of avoided damage to human health and the environment. For this reason, activists argue that cost-effective and efficient policy design should seek greater emissions reductions where health benefits would be highest and are most needed (Méndez 2020). Climate change policy that ignores such benefits is considered inefficient in two ways: It would choose suboptimal emissions reductions targets overall and it would fail to account for differences in abatement benefits across emission sources (Boyce and Pastor 2013: 803; Cushing et al. 2018; Méndez 2020).

Second, environmental justice groups center their work on issues of embodiment and ask, "What are the connections that their bodies make and manifest daily between the changing climate, pollution, and health?" (Krieger 2005: 2). This entails a holistic understanding of the multiple harms that pollution and a changing climate have on human bodies in specific local settings. These types of questions and forms of embodied knowledge, when engaged in truly collaborative settings, are a crucial supplement to solutions developed by policy experts. They confront

uneven power dynamics in environmental governance and can alleviate problems that can be caused by introducing one-size-fits-all policy into various local contexts. Environmental justice groups, moreover, debate with experts over issues of truth and method, specifically challenging the political use and control of expertise by claiming to speak credibly as experts in their own right (Corburn 2005).

A third point is that environmental justice groups conceptualize climate change policy in a multifaceted way, calling out unequal impacts while advocating solutions focused on social and health equity. Health equity is achieved when every person has the opportunity to "attain his or her full health potential" and no one is "disadvantaged from achieving this potential because of social position or other socially determined circumstances" (Braverman et al. 2003: 181). In the context of climate change, this approach involves exploring how programs, practices, and policies affect the health of individuals, families, and communities. It establishes common goals and ongoing constructive relationships between the health sector, climate science, urban planning, and other fields at multiple scales (London et al. 2013).

Fourth, in promoting climate action from the streets, environmental justice groups seek to empower individuals and groups with the skills they need to effect change within their communities. They advocate for partnerships with residents, governments, and other entities as a means to harness policy processes that support community-defined goals. Hence, their solutions to climate change involve diverse stakeholders in the strategic and management activities of climate planning and policy (Corburn 2005). These approaches, such as transit-oriented development, renewable energy, and urban forestry projects, are aimed at reducing global greenhouse gas emissions and the risk of asthma and respiratory diseases. Advocates also seek to generate career-track jobs in the green economy for workers from disadvantaged communities. These solutions seek to target policy investments and resources to the neighborhoods most in need.

The fifth defining characteristic of climate change from the streets is that its practitioners make concerted efforts toward neighborhood-scale adaptation planning, in addition to mitigation measures. Such integration can be difficult because of important differences in policy objectives. Mitigation deals with the causes of climate change (accumulation of greenhouse gases in the atmosphere), whereas adaptation seeks to prepare society for the impacts of a changing climate. The policies are also defined in different spatial and temporal scales. For example, the benefits of adaptation are local and short-term, whereas mitigation benefits are global and long-term (Locatelli 2016: 1). Nonetheless, environmental justice groups contend that synergies between mitigation and adaptation can be developed in a cost-effective and equitable way. This type of policy integration is important because it acknowledges that certain irreversible and significant impacts from climate change are already underway and are inevitable, even if governments succeed

in reducing greenhouse gas emissions. Environmental justice advocates argue that some groups are more socially vulnerable and will need additional safeguards from the immediate and anticipated effects of climate change (Stehr and Storch 2005).

Finally, climate change from the streets takes environmental justice advocates, whose concerns are often rooted in local conditions, beyond a single site and links them with the global scale of climate change, traversing local, regional, statewide, national, and international settings. How to take interconnected action across scales has become a central concern for these groups. Doing so creates opportunities (through repoliticization processes) to rethink the relationships among places, people, projects, and sources of knowledge, and opens up spaces that are often rendered invisible from the point of view of a single location or scale. The source of this challenge, and this potential, lies in the nature of a movement with local roots seeking to address a global crisis. Strategies for bridging between scales are crucial for bringing opposing climate change worldviews into dialogue and stabilizing climate-related regulatory program.

3.3 Conclusion

Through an analysis of climate change worldviews, we can better understand the culturally contingent nature of climate policy – the assumptions and values that often create conflict between community understandings of local environmental conditions and the prevailing top-down regulatory culture of climate change (Knox-Hayes 2016). In California, tensions between worldviews, moreover, are often centered on the politics of scale, markets, race, and class. The role of scale, in particular, can be difficult to grasp, since its subjective and political nature often goes unrecognized. Seeing a problem at any given scale involves decisions – conscious or not – about which of its aspects to disregard, and which to act upon (Williamson 2015: 19).[4] Scale is not objective. It is constructed through human relationships and is an important factor in political strategies and contests over power and authority. Changing the scale at which a problem is addressed can alter the power relationships that surround it – associations that determine unequal access to resources and institutions, and the ability to choose and act despite resistance from others (Osofsky 2009).

[4] According to Hari Osofsky (2009: 130–133), referencing climate change as a multiscalar problem can be a complex and contested concept in both geography and ecology. Geographers define scale through four aspects: (1) "a nested hierarchy of bounded spaces of differing size"; (2) "the level of geographic resolution at which a given phenomenon is thought of, acted on or studied"; (3) "the geographical organizer and expression of collective social action"; and (4) "the geographical resolution of contradictory processes of competition and cooperation" (Brenner 2004: 9). Ecologists, on the other hand, define scale in more technical terms as comprised of two parts: grain and extent. Grain refers to "the finest level of spatial or temporal resolution available within a given data set" and extent refers to "the size of the study area or the duration of the study" (Sayre 2005: 281).

Any account of climate change policy that focuses on a single scale thus can only be partial and undermine the stability of climate change programs. It is undeniable that no single locality, acting alone, can hope to address the problem. But analysis at the global scale will inevitably gloss over the question of how public definitions of climate change can reinforce existing local inequalities in power, resources, and health. If climate change is seen solely as a global phenomenon, then it will seem self-evident that only "global actors" – national governments, the United Nations, multinational corporations, the international community of scientists – are empowered to address it. By seeking to understand the effects of climate change and climate policy at multiple scales (and through the processes of repoliticization), we can promote more egalitarian forms of public decision-making about this critical issue (Barrett 2013).

Activists' advocacy work shows how climate change policy is an ongoing cultural creation, made and remade through the daily practices of diverse people. Through a reoccurring process of conflict and collaboration, a broad range of individuals and organizations are co-constituting what climate change means. The geographer Mike Hulme (2007) argues that the tension between worldviews can have a balancing – even creative – impact, yielding stronger, more robust approaches to resolving climate change. Furthermore, worldviews are not fixed and can transform over time. Scientific ideas and beliefs about climate change evolve together with the representations, identities, debates, and institutions that give practical effect and meaning to policies. In other words, the ways in which we conceptualize climate change don't just happen. People are behind our government, policies, and environmental values – and they can change their minds (Jasanoff 2005).

Beginning in 2012, California has moved away from a strict adherence to carbon reductionism by adopting a wave of legislation inserting and stabilizing environmental justice and public health elements into the state's climate change policies. The California Air Resources Board (charged with overseeing the state's climate programs) now has an environmental justice-focused senior officer and two board positions dedicated to environmental justice representatives. The state expanded its climate adaptation strategies to include robust local programs in disadvantaged communities. In addition, due to activists' campaigns, more than 50 percent of the state's cap-and-trade revenue must benefit disadvantaged communities – this has resulted in billions of dollars in investments (CARB 2018).

These successes have been underpinned in part by repoliticization processes at the city scale, where open-ended consultation and collaboration between activists, regulators, and elected officials brought different worldviews – and concerns of varying scales – into dialogue (Méndez 2015, 2020). They also reflect the

innovative networked strategies that marginalized communities in California and beyond have used to narrate the effects of international carbon trading at a global scale, without reducing their local experiences to a single story (London et al. 2013). The science of climate change may be certain, but policy decisions about how to respond to its effects engage with complex social, cultural, and political realities. Understanding the power relations and worldviews of interested parties in this new policy arena must be a central focus of theory and practice as climate change laws, policies, and programs continue to develop.

References

Ballew, M., Goldberg, M., Rosenthal, S., Cutler, M., and Leiserowitz, A. (2019). Climate change activism among Latino and White Americans. *Frontiers in Communication* 3(58), 1–15.

Barrett, A. (2013). The necessity of a multiscalar analysis of climate justice. *Progress in Human Geography* 37(2), 215–33. https://doi.org/10.1177/0309132512448270

Bentham, J. (2007). *An Introduction to the Principles of Morals and Legislation*. Mineola, NY: Dover Publications.

Boyce, J. K., and Pastor. M. (2013). Clearing the air: Incorporating air quality and environmental justice into climate policy. *Climatic Change* 120(4), 801–14. https://doi.org/10.1007/s10584-013-0832-2

Braveman, P. A. (2003). Monitoring equity in health and healthcare: A conceptual framework. *Journal of Health, Population, and Nutrition* 21(3), 181.

Brenner, N. (2004). *New State Spaces: Urban Governance and the Rescaling of Statehood*. Oxford: Oxford University Press.

Bullard, R. D. (2000). *Dumping in Dixie: Race, Class, and Environmental Quality* (3rd ed.). Boulder, CO: Routledge.

CARB (California Air Resources Board). (2008). AB 32 Scoping Plan. https://arb.ca.gov/cc/scopingplan/scopingplan.htm

CARB (California Air Resources Board). (2014). AB 32 Scoping Plan Update. https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan

CARB (California Air Resources Board). (2018). California Climate Investments Using Cap-and-Trade Auction Proceeds. www.arb.ca.gov/cc/capandtrade/auctionproceeds/2018_cci_annual_report.pdf

Corburn, J. (2005). Street science: Community knowledge and environmental health justice. In *Urban and Industrial Environments*. Cambridge, MA: MIT Press.

Cushing, L. J., Blaustein-Rejto, D., Wander, M. et al. (2018). Carbon trading, co-pollutants, and environmental equity: Evidence from California's cap-and-trade program (2011–2015). *PLoS One* 15(7), 1–20.

Ezrahi, Y. (1990). *The Descent of Icarus: Science and the Transformation of Contemporary Democracy* (1st ed.). Cambridge, MA: Harvard University Press.

Hoffman, A. (2015). *How Culture Shapes the Climate Change Debate*. Stanford, CA: Stanford University Press.

Hull, R. B. (2006). *Infinite Nature*. Chicago: University of Chicago Press.

Hulme, M. (2007). Geographical work at the boundaries of climate change. *Transactions of the Institute of British Geographers* 33(1), 1–11.

Hulme, M. (2010). Problems with making and governing global kinds of knowledge. *Global Environmental Change* 20(4), 558–64. https://doi.org/10.1016/j.gloenvcha.2010.07.005

ICELI. (2009). *The Mitigation-Adaptation Connection: Milestones, Synergies and Contradictions*. ICLEI – Local Governments for Sustainability. http://itepsrv1.itep.nau.edu/itep_course_downloads/~GeneralAQInfo/Climate%20Change/ICLEIMitigationAdaptationConnection.pdf

IPCC (Intergovernmental Panel on Climate Change). (2014). *Climate Change 2014 Synthesis Report Summary for Policymakers*. IPCC. www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf

Jasanoff, S. (2005). *Designs on Nature: Science and Democracy in Europe and the United States*. Princeton, NJ: Princeton University Press. http://grail.eblib.com.au/patron/FullRecord.aspx?p=713600

Kaswan, A. (2018). A broader vision for climate policy: Lessons from California. *San Diego Journal of Climate and Energy Law* 9, 83–150.

Knox-Hayes, J. (2016). *The Cultures of Markets: The Political Economy of Climate Governance*. Oxford: Oxford University Press.

Krieger, N. (2005). *Embodying Inequality: Epidemiologic Perspectives*. Abingdon: Routledge.

Lind, M. (2011). Michael Lind: The five worldviews that define American politics. *History News Network*, November 1. https://historynewsnetwork.org/article/135314

Locatelli, B., Fedele, G., Fayolle, A., and Baglee, A. (2016). Synergies between adaptation and mitigation in climate change finance. *International Journal of Climate Change Strategies and Management* 8(1). https://doi.org/10.1108/IJCCSM-07-2014-0088

London, J., Karner, A., Sze, J. et al. (2013). Racing climate change: Collaboration and conflict in California's global climate change policy arena. *Global Environmental Change* 23(4), 791–99. https://doi.org/10.1016/j.gloenvcha.2013.03.001

Méndez, M. (2015). Assessing local climate action plans for public health co-benefits in environmental justice communities. *Local Environment* 20(6), 637–63. https://doi.org/10.1080/13549839.2015.1038227

Méndez, M. (2016). From the street: Civic epistemologies of urban climate change. In D. Wendel and F. Samuels, eds., *Spatializing Politics: Essays on Power and Place*. Cambridge, MA: Harvard University Graduate School of Design, pp. 337–66.

Méndez, M. (2020). *Climate Change from the Streets: How Conflict and Collaboration Strengthen the Environmental Justice Movement*. New Haven, CT: Yale University Press.

Nachbaur, J., and Roberts, T. (2012). *Evaluating the Policy Trade-Offs in ARB's Cap-and-Trade Program*. Sacramento, CA: Legislative Analyst Office.

Osofsky, H. (2009). The intersection of scale, science, and law in Massachusetts v. EPA: State, national, and international approaches. In W. C. G. Burns and H. M. Osofsky, eds., *Adjudicating Climate Change State, National, and International Approaches*. Cambridge: Cambridge University Press, pp. 129–144.

Park, A. (2009). *Everybody's Movement: Environmental Justice and Climate Change*. Washington, DC: The Environmental Support Center, December. https://kresge.org/sites/default/files/Everybodys-movement-climate-social-justice.pdf

Rabe, B. (2009). Governing the climate from Sacramento. In S. Goldsmith and D. Kettl, eds., *Unlocking the Power of Networks: Keys to High-Performance Government*. Washington, DC: Brookings Institution, pp. 34–61.

Sayre, N. F. (2005). Ecological and geographical scale: Parallels and potential for integration. *Progress in Human Geography* 29(3), 276–90. https://doi.org/10.1191/0309132505ph546oa

Schlosberg, D., and Collins, L. (2014). From environmental to climate justice: Climate change and the discourse of environmental justice. *Wiley Interdisciplinary Reviews: Climate Change* 5(3), 359–374.

Stehr, N., and von Storch, H. (2005). Introduction to papers on mitigation and adaptation strategies for climate change: Protecting nature from society or protecting society from nature? *Environmental Science & Policy* 8(6), 537–40. https://doi.org/10.1016/j.envsci.2005.08.001

Stone, D. (2012). California tackles climate change, but will others follow? *National Geographic News*, November 16. www.nationalgeographic.com/history/article/121116-california-cap-and-trade

US Environmental Protection Agency. (2012). Environmental Justice Definition. Collections and Lists. US EPA. www.epa.gov/environmentaljustice

Williamson, R. (2015). Towards a multi-scalar methodology: The challenges of studying social transformation and international migration. In S. Castles, D. Ozkul, and M. Arias Cubas, eds., *Social Transformation and Migration*. Migration, Diasporas and Citizenship Series. London: Palgrave Macmillan, pp. 17–32. https://doi.org/10.1057/9781137474957_2