DEFINING ENVIRONMENTS
Critical Studies in the Natural World

EMERGING AREAS IN THE HUMANITIES

Acknowledgements

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Introduction

As members of an unusual "research group" at the University of Illinois, we have spent the academic year of 2019-2020 exploring this emerging field of "environmental humanities." Funded by the Andrew W. Mellon Foundation, our group was diverse—an "intergenerational and interdisciplinary" collaborative team featuring members from various humanistic disciplines and at various stages of their academic careers, all united loosely by a shared interest in this new and exciting field. Working with this group was rewarding. To be honest, however, we often struggled to define our shared subject—the environmental humanities. The phrase is exciting, but the particulars of the field are difficult to pin down. Perhaps that elusiveness is meaningful in itself—the scope of the field is almost too wide to define. In our work, we have explored a number of themes including environmental justice, industrial development, land rights, and colonization, working in weekly seminars to explore new analytics with our research group. All the while, we have observed that we were only scratching the surface; nearly all of the subjects of humanities disciplines can be understood through an environmental lens. We have come to realize that there are so many varieties of environmental humanities, and the near universal possibilities for application of the environmental lens makes the field all the more important. We have come to believe strongly in the value of humanistic study of the environment and critical examination of the relationship of the human and non-human.

We are so excited about the following publication because the collection of undergraduate work shows the breadth of rigorous, original research in the field. There are many undergraduates at University of Illinois who are doing original, critical, creative work in the humanities, and we are so happy to have an opportunity to highlight some of them. While we admire our classmates across campus who are doing research in STEM fields, we are proud to have a chance to showcase some of the innovative undergraduate research in the humanities. To put it bluntly, research in the humanities is difficult. Questioning what is considered fact, thinking critically about the social, political, and cultural networks in which we live, and coming up with new explanations for what constitutes human social structures, governments, technology, art and lives pushes students beyond their academic and personal comfort zones. Framing these humanistic questions in terms of the environment has been rewarding because it has both expanded our understanding of what the humanities are, and revealed connections among modes of thinking, academic subject areas, and regions of the world.

Academia is characterized by a number of disciplinary boundaries and navigating and surmounting them has been a cornerstone of our process. Initially, we thought about working with people in the sciences to apply a humanistic perspective to their work. But we also realized there is so much room for collaboration and expansion within the humanities disciplines themselves. Instead of taking what is traditionally considered "environmental" in the scientific sense and forcing a humanistic lens on it, we decided to keep the focus on the humanities and their special approaches and methods. Examining humanistic concerns—stories, narratives, discourse, ways of

knowing—and looking at them in the context of environmental issues has been incredibly rewarding.

In our current cultural moment, and at the University of Illinois in particular, STEM fields are often considered a more promising way to address environmental issues. This misconception is harmful because it limits the possible solutions to mitigating climate change and environmental degradation. We believe that culture is the single most important factor in effectively addressing environmental and climate problems. So, in the process of working towards solutions, studying the ways in which people understand their relationships to the environment is at least as useful as technological innovation. Understanding both the environment itself and the ways we know it through art, literature, history, and philosophy is essential for solving environmental problems and climate issues. And so perhaps this conviction can begin to answer the question we began with, since it is undoubtedly the basis for the field of environmental humanities.

The following essays are an eclectic bunch. From studies of dystopian novels to historical excavations of the so-called Green Revolution in India, they range across the world, through time, and into various analytical terrain. They are exemplary of a strong and growing body of work by undergraduates on our campus who are engaging the new field of environmental humanities. Read them for their wisdom on critical environmental issues, and also for the window they provide into how undergraduate students are helping define and shape this emerging area of academic inquiry.

- Sarah Gediman
- Amanda Watson
- Alaina Bottens

ENVIRONMENTAL CHANGE

Jai Jawan, Jai Kisan: The Environmental Politics of India's Green Revolution

Pranav Gulukota | May 2020

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The nationalist slogan "Jai Jawan, Jai Kisan," meaning "victory to the soldier, victory to the farmer," is familiar to anyone who follows Indian politics.

The word "jai," from the Sanskrit "jaya," meaning "victory to," has complex connotations, as it is most often used in a Hindu religious context to indicate a level of pious devotion to a god or goddess. For instance, "Jai Ganesha" means "victory to Ganesha." The usage of the word "Jai" for Indian nationalist purposes is a longstanding phenomenon, as seen in the slogan "Bharat Mata ki Jai" meaning "victory to Mother India," where Mother India herself takes the form of a goddess-like figure. The slogan "Jai Jawan, Jai Kisan" underscores the significance of agriculture in the Indian national imagination, assigning the role of the farmer equal importance to that of the soldier, a typical nationalist icon the world over. Policies dedicated to agriculture will, therefore, always have a nationalist significance in postcolonial India.

India's early leaders were well aware of the need to transform the farmer into a nationalist symbol, but they were also keen on turning agriculture itself into a nationalist enterprise. After India became independent of British rule in 1947, memories of colonial famines spurred leaders in the Indian National Congress to take steps to ensure agricultural self-sufficiency. The Green Revolution was a global phenomenon promoted by NGOs, scientists, and governments which commenced in the 1950s, shortly after India's independence, and continued through the 1970s. The Revolution promoted modern agriculture by means of high-yielding crop varieties, modern irrigation, chemical fertilizers, and pesticides. Though a global phenomenon, the Green Revolution unfolded differently in different nations. In India, the context of constructing the world's largest democracy shaped how the Green Revolution was conducted, as the question on politicians' minds was how to create a national polity in a country so large and diverse. The Green Revolution in India was part of this political project of forming a nation.

Many observers of India had believed that India was a temporary grouping of wildly diverse communities under a "national" identity for the sole purpose of uniting against a common oppressor, the British, and would eventually disintegrate after independence. During colonial rule, Sir John Strachey, a member of the Governor-General's Council, wrote, "there is not and never was an India... that men of the Punjab, Bengal, the North-western Provinces, and Madras, should ever feel that they belong to one Indian nation, is impossible."[1] According to historian Ramachandra Guha, India is an unnatural nation, as liberal democracy had never been attempted in a country as large, diverse, impoverished, and illiterate. Guha points out that most observers had predicted that Indian democracy would collapse after independence due to the immense divisions within the country, along the lines of caste, language, religion, and class.[2] The fact that Indian democracy persists to the present day, the many challenges facing India notwithstanding, is therefore quite surprising. While Guha focuses primarily on political developments and federalist accommodation of diverse group interests as the cause of this stability,

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1.   John Strachey, *India* (London, 1888), 2-5.

2.   Ramachandra Guha, *India After Gandhi: The History of the World's Largest Democracy* (New York: HarperCollins, 2007), 8-11.

national projects such as the Green Revolution were also undertaken with the goal of national integration.

Marxist perspectives on the Green Revolution provide useful insights into how the Global North maintained domination over the Global South in economic and cultural terms through the promotion of the Green Revolution and the role of global capitalism in this process. However, it is also important to take nationalist politics and civilizational conceptions of the environment into account. While the Marxist lens is crucial to understand the exploitative and neocolonial characteristics of the Green Revolution, the role of national politics in molding the Green Revolution to particular national characteristics cannot be dismissed.

Historiography

The historiography surrounding the Indian Green Revolution has shifted considerably as the notion promoted by NGOs and the Indian government, that the Green Revolution was successful at modernizing agriculture and increasing food security, has been thrown into question. As Glenn Davis Stone argues, "The new work provides a fundamental rethinking of many key aspects of the revolution, including the motivations behind it, the merits of the agricultural science in India that it displaced, whether the new seeds actually led to increased food production, and how concepts of desirable plants changed."[3]

Scholars of agriculture have generally come to the conclusion that famines are man-made phenomena; drought is natural but famine is artificial. Independent India, though suffering from severe circumstances of malnutrition, has not experienced famines. This fact could be cited to argue for the merits of the Green Revolution. However, the economist Amartya Sen has argued that famines never occur in liberal democracies, providing not just a defense of Indian democracy but also implicitly rejecting the view that the lack of famines in postcolonial India can be attributed primarily to the Green Revolution:

> Famines are easy to prevent if there is a serious effort to do so, and a democratic government, facing elections and criticisms from opposition parties and independent newspapers, cannot help but make such an effort. Not surprisingly, while India continued to have famines under British rule right up to independence (the last famine, which I witnessed as a child, was in 1943, four years before independence), they disappeared suddenly with the establishment of a multiparty democracy and a free press.[4]

Some historians have argued that the Green Revolution did not achieve its stated goals and in fact worsened India's food security issues. This increasingly skeptical eye toward the Green Revolution is almost as old as the Green Revolution itself. In recent years, however, Nick Cullather's book *The Hungry World: America's Cold War Battle Against Poverty in Asia*, has

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3. Glenn Davis Stone, "New Histories of the Indian Green Revolution," *Geographical Journal* (2019): 1

4. Amartya Sen, "Democracy as a Universal Value, *Journal of Democracy* 10, no. 3 (1999): 6.

consolidated many of these arguments through the lens of American imperialism.[5] Cullather's in-depth look at American foreign policy in the Cold War shows that the United States was motivated to support the Green Revolution around the world in the service of preventing the spread of communism and promoting American agribusinesses. Moreover, Cullather notes, Third World leaders and American technocrats had different end goals: "Scientific agriculture was an instrument for molding peasants into citizens with modern attitudes, loyalties, and reproductive habits. But food policies were as contested then as they are today. While Kennedy and Johnson envisioned Kansas-style agribusiness guarded by strategic hamlets, Indira Gandhi, Marcos, and Suharto inscribed their own visions of progress onto the land."[6] Evidently, national political trajectories were as important as geopolitical trends.

> "The perception of the environment in India was indeed transformed, at least in the eyes of a certain elite population, from something that individuals or families interact with to something whose fate was intertwined with that of the Indian nation-state, both agriculturally and in terms of conservation."

Other scholars have called into question the Green Revolution's purportedly positive impact on food security. Richa Kumar argues that, "There is inadequate evidence to support the claim that India was food-insecure in the 1960s. Moreover, evidence suggests that India's food and nutritional insecurities today are the aftermath of the Green Revolution strategy promoted since the 1960s."[7] Kumar's research demonstrates that a selective reading of India's past prompted Indian leaders to pursue modernization. This strand of historiography leads to new directions of inquiry, focusing on ideologies of environment as the effectiveness of the Green Revolution as a food security endeavor is questionable at best. Benjamin Siegel's book *Hungry Nation: Food, Famine, and the Making of Modern India* does this explicitly through the voices of citizens, scientists, politicians, and others to highlight how food, agriculture, and the Green Revolution were crucial factors in the making of modern India given their role as linchpins of the nationalist movement and later postcolonial political mobilizations.[8]

Building upon Siegel's emphasis on ideology, and Kumar's discussion of selective readings of India's agrarian pasts, this paper focuses on the Green Revolution as an attempt to displace traditional modes of interacting with the environment and replace them with a modern, nationalist environmental sensibility.

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5. Stone, "New Histories," 1.

6. Nick Cullather, *The Hungry World: America's Cold War Battle Against Poverty in Asia* (Cambridge, MA: Harvard University Press, 2010), 2.

7. Richa Kumar, "India's Green Revolution and Beyond: Visioning Agrarian Futures on Selective Readings of Agrarian Pasts," *Economic and Political Weekly 54*, no. 34 (August 24, 2019): 41.

8. Benjamin Robert Siegel, *Hungry Nation: Food, Famine, and the Making of Modern India* (Cambridge: Cambridge University Press, 2018).

Nationalism and National Integration

The Green Revolution was ultimately concerned with the Indian village, taking as its task the modernization of village India's traditional modes of agriculture. Three of the most important figures in the founding of modern India—Mohandas K. Gandhi, Jawaharlal Nehru, and B. R. Ambedkar—each held very different views when it came to the place of the Indian village in the life of the republic. As Surinder S. Jodhka argues, "while for Gandhi the village was a site of authenticity, for Nehru it was a site of backwardness and for Ambedkar the village was the site of oppression."[9] These different stances are understandable from these leaders, as Gandhi's nationalism was based on the romanticization of the Indian village as representing India's soul, Nehru's nationalism was based on a dream of an industrialized, socialist India, and Ambedkar's nationalism was based on the eradication of caste oppression. Out of these three leaders, Gandhi's ideas were most quickly dismissed, while those of Nehru, India's first Prime Minister, and Ambedkar, were treated more seriously. While Nehru's views on the Indian village are most relevant when it comes to the implementation of the Green Revolution, it is worth considering the intellectual milieu in which he was operating, one informed by the views of Gandhi and Ambedkar.

Gandhi's view of the village as the fundamental unit of Indian society was shaped by his particular environmental sensibility which was intensely critical of cities and modern industrial society: "Our cities are not India. India lives in her seven and a half lakhs of villages, and the cities live upon the villages. They do not bring their wealth from other countries. The city people are brokers and commission agents for the big houses of Europe, America and Japan. The cities have cooperated with the latter in the bleeding process that has gone on for the past two hundred years."[10] As Ramachandra Guha explains, "Gandhi's broader vision for a free India was a rural one. He worked for the renewal of its villages, in defiance of the worldwide trend towards industrialization and urbanization. The reasons for this were moral as well as ecological—namely that there were natural limits to the industrialization of the whole world, as distinct to the industrialization of one country."[11] Given his abiding belief in the unsustainability of industrial civilization, Gandhi's writings envisioned an India comprised of self-sufficient "village republics."

By contrast, Ambedkar viewed the village as the site of caste oppression and the city the site of liberation. Ambedkar described the Indian village as the very antonym of democracy, describing Gandhi's "village republics" thus:

> In this Republic there is no place for democracy. There is no room for equality. There is no room for liberty and there is no room for fraternity. The Indian village is the very negation of Republic. The Republic is an Empire of the Hindus over the untouchables. ... The love of the intellectual Indian for the village community is

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9.   Surinder S. Jodhka, "Nation and Village: Images of Rural India in Gandhi, Nehru, and Ambedkar," *Economic and Political Weekly* 37, no. 32 (August 10, 2002): 3343.

10.   Mohandas K. Gandhi, *The Collected Works of Mahatma Gandhi*, vol. 21, (Delhi: Government of India, 1966), 409.

11.   Ramachandra Guha, *Environmentalism: A Global History* (New York: Longman, 2000), 22.

of course infinite, if not pathetic. ... What is a village but a sink of localism, a den of ignorance, narrow-mindedness, and communalism?[12]

For Ambedkar, modernization was essential in order to break down the oppressive structures of the Indian village community. Though Ambedkar was the chief architect of India's Constitution, some of Gandhi's ideas, such as a certain degree of village autonomy were incorporated into the document. On the whole, however, the village was treated with contempt and mass migrations from villages to cities characterize the general trend of postcolonial Indian development.

Ultimately, Nehru's understanding of the Indian village had more influence on the shape of the Green Revolution than either Gandhi or Ambedkar, given his ability to enact policies as first Prime Minister. Nehru dreamed of a modern, industrial India and had a rather negative perception of the Indian village, similar to Ambedkar though with less of a focus on caste. His first reaction to life in the Indian village was shock, as he came in contact with "a new picture of India, naked, starving, crushed, and utterly miserable."[13] Thus, his view of the Indian village was of impoverished communities inimical to human welfare and in need of modernization. This ideology explains why he and his successors were so intent on pursuing the Green Revolution. Nehru viewed the village as a relic of a bygone era, based on an exploitative, feudal economic system which the socialist Nehru was intent on destroying through economic reforms and technological progress.

Indira Gandhi, Nehru's daughter and the third Prime Minister of India, held a similar politics to her father. She saw a continuity between the civilizational ethos of India and that of the nation-state and she felt that the Green Revolution was in line with Indian philosophies of environmentalism rooted in ancient India. As she explained in a speech she gave to the United Nations, "Modern man must re-establish an unbroken link with nature and with life. He must again learn to invoke the energy of growing things and to recognize, as did the ancients in India centuries ago, that one can take from the Earth and the atmosphere only so much as one puts back into them. In their hymn to Earth, the sages of the Atharva Veda chanted-I quote, "What of thee I dig out, let that quickly grow over. Let me not hit thy vitals or thy heart." So can man himself be vital and of good heart and conscious of his responsibility."[14] In pursuing Green Revolution technologies, then, part of the goal was environmental sustainability and conservation.

Indira Gandhi quoting the Atharva Veda belied her own hostility to traditional Indian ways of interacting with the environment. She and others favored a Westernized form of environmental conservation alongside rapid modernization. Ramachandra Guha points out that environmentalists have often been "united in their hostility to farmers, herders, swiddeners and hunters who have lived in the 'wild' well before it became a 'park' or a 'sanctuary.' They see these human communities as having a destructive effect on the environment, their forms of livelihood aiding the disappearance of species and contributing to soil erosion, habitat simplification, and worse."[15] The proponents of the

12. B. R. Ambedkar, *Dr Babasaheb Ambedkar Writings and Speeches*, ed. V. Moon, vol. 5 (Bombay: Government of Maharashtra, 1979), 26.

13. Jawaharlal Nehru, *An Autobiography* (1936; repr, New Delhi: Oxford University Press, 1980), 52.

14. Indira Gandhi, "Man and Environment" (speech), Plenary Session of the United Nations Conference on Human Environment, Stockholm, June 14, 1972.

15. Ramachandra Guha, "The Authoritarian Biologist and the Arrogance of Anti-Humanism: Wildlife Conservation in the Third World," *Ecologist* 27, no. 1 (January/February 1997): 15.

Green Revolution therefore had similar goals as the environmentalists: uprooting traditional environmental relations and creating certain areas of modernized agriculture alongside other areas of untampered "wilderness." As Guha explains, "When India became independent, in 1947, it had less than half-a-dozen wildlife reserves; it now has in excess of four hundred parks and sanctuaries, covering over 4 percent of the country and there are proposals to double this area."[16] In fact, as William Cronon has demonstrated, the idea of wilderness free from human impact is ahistorical, since "wilderness" never truly existed: "we mistake ourselves when we suppose that wilderness can be the solution for our culture's problematic relationships to the nonhuman world, for wilderness is itself no small part of the problem."[17] Cronon demonstrated that wilderness is itself a distinct creation of modern civilization and its desire to neatly separate the realm of human activity from that of nonhuman activity. It does not concern itself with sustainability so much as it entertains fantasies of an untouched Nature.

This fits entirely within the vision of national integration, as the Green Revolution concept of creating a national agricultural pool went alongside with the conservation concept of creating a national wilderness pool in the form of national parks which the people of modern India can visit. The Indian state attempted to promote the use of standardized crop varieties, insecticides, and fertilizers. This went alongside the creation of a large legal bureaucracy for the implementation of these regulations. At the same time, as the slogan "Jai Jawan, Jai Kisan" suggests, it was deeply invested in the cultural valorization of the farmer. Kumar points out that while there were only a few "Green Revolution crops," all crops experienced increases in yields during the 1950s and 1960s, throwing into doubt the claim that the new wheat and rice varieties were responsible for better crop yields rather than overall changes to the economic system, including the removal of an exploitative colonial apparatus of governmentality.[18]

The adoption of the religious idiom for nationalist purposes was a two-way street, as Hindu art itself also began to adapt to the agricultural ideals of the Nehruvian state. The most direct reference to something agricultural in Hindu iconography is the cow. One painting perfectly demonstrates the incorporation of modern agricultural themes, including the veneration of the farmer, into religious art.[19] The painting by Raja Ravi Verma called "Chaurasi Dev Darshan" or "The Darshan of 84 gods," is explicitly concerned with national integration, as within the figure of the cow, eighty-five distinct gods and goddesses are featured, which each have their own devotional traditions centered in different parts of the country. Bringing them all together into one painting, where devotees can do their darshan to all at once, was a political choice. There is a poor farmer appearing to be feeding wealthier individuals

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16. Ibid., 14.

17. William Cronon, "The Trouble with Wilderness; Or, Getting Back to the Wrong Nature," *Environmental History* 1, no. 1 (January 1996): 7.

18. Kumar, "India's Green Revolution," 43.

19. Figure 1, Raja Ravi Verma, "Chaurasi Dev Darshan", Hindu Calendar Art, 1960, In "How Calendar Art Helped Make the Cow a Divine Figure in India," by Baisali Mohanty, *Scroll*.in, 2015.

at the bottom of the painting, the valorization of the humble farmer. Thus, the nationalist idiom was incorporated into the religious one. As journalist Baisali Mohanty explains, the painting was extensively circulated and, "The state employed these lithographs as a political instrument to build consensus on the ground. They represented the cow as the universal nourisher, associating her with the figure of Mother India. ... With its body assimilating the many strands of Hinduism cutting across castes, rural-urban divide and elite-poor distinction into one unified figure."[20] Thus, while India was an avowedly secular nation-state, the popular appeal of Hindu religious idioms was used for promoting the Green Revolution and national integration. As a calendar artwork, the intended audience was not necessarily the educated elite, but the general public, many of whom were illiterate; hence its reliance on images to get its point across.

One of the consequences of the Green Revolution was the valorization of certain scientists to a level of heroism. While Norman Borlaug was elevated to this level on a global scale, in India, the scientist M. S. Swaminathan was also made into a national hero for his work on the Green Revolution, particularly the creation of new wheat varieties. Calling Swaminathan the "godfather of the Green Revolution," *Time* magazine epitomized this trend in a 1999 article, writing, "The seeds planted today by farmers from Punjab to Pusan are nothing like those used by their ancestors. If they were, the entire continent would either be starving or enslaved to the outside world for food or financing. That turn of history, one of the truly astonishing transformations of the century, is now known as the Green Revolution. It relied heavily on the work of a diminutive Indian geneticist named Monkombu Sambasivan Swaminathan."[21] This description of Swaminathan as having been almost single-handedly responsible for the Revolution, entirely ignoring the argument that the Green Revolution may have done more harm than good for India's food security by rendering much of the soil unusable, is rather astonishing. That this article appears in an American magazine indicates the extent to which Swaminathan became not just a national hero but also an international one.

> " Even if one accepts the arguments that the Green Revolution has not been successful at actually increasing crop yields or food security, it was more successful at its other goal of altering traditional ways of interacting with the environment and replacing them with a nationalist environmental vision. "

While historians are right to question early claims about the Green Revolution's success in creating greater food security and to challenge the type of hero-worship of scientists like Swaminathan, they have largely overlooked its role in solidifying Indian democracy through creating national institutions. How much the Indian nation-state owes the fact that it stayed together to the Green Revolution is unclear. However, the ideology of replacing traditional and community-based relationships with the environment with the creation of a single national agricultural pool and national wilderness conservation initiatives was entirely committed to the project of national integration. The perception

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20. Baisali Mohanty, "How Calendar Art Helped Make the Cow a Divine Figure in India," *Scroll*.in (December 24, 2015).

21. Anthony Spaeth, "M. S. Swaminathan," *Time* (August, 23, 1999).

of the environment in India was indeed transformed, at least in the eyes of a certain elite population, from something that individuals or families interact with to something whose fate was intertwined with that of the Indian nation-state, both agriculturally and in terms of conservation.

The Legal Framework of Modernization

The Green Revolution in India would not have been possible without some important laws which were rather intrusive in the lives of rural communities, for better or for worse. The fact that these laws, which had the goal of agricultural modernization, were so intrusive is indicative of the effort on the part of Indian politicians to uproot traditional ways of interacting with the environment.

One of the first major laws dealing with agriculture and land reforms among Hindus was the Hindu Succession Act of 1956. The Act is among a number of so-called Hindu Code Laws codifying Hindu civil law. Several religious communities in India have distinct civil law codes based on their own religious law, with Hindus, Muslims, and Christians each following a different set of civil laws. Under the British, Hindu law followed the teachings of the ancient Hindu scripture, the Manusmriti, a "manava dharmashastra" or "book of the dharma of man," Muslim law followed the Sharia, and Christian law followed Biblical precepts. While this colonial framework of different civil law codes for different religious communities was inherited by the postcolonial Indian state and still exists today, new civil law codes were introduced in an attempt to make these religious law codes more progressive, particularly with respect to Hindu civil law. The new Hindu Code Laws enshrined principles such as gender equality and an end to the caste system. The Hindu Succession Act of 1956 is most relevant for the Green Revolution as it occurred in the earliest stages of this long "revolution" and dealt with agricultural lands, specifically issues of inheritance and gender. Under this Act, earlier norms of land inheritance being split among sons were outlawed and land rights for women were enshrined: "Any property possessed by a female Hindu, whether acquired before or after the commencement of this Act, shall be held by her as full owner thereof and not as a limited owner."[22] Thus, the Indian government held an ideology of modernization and gender equality which necessitated a change in every facet of how rural communities interacted with the environment, including land ownership rights. In addition, the focus on gender equality demonstrates that technological modernization was not the only concern of Green Revolution era agricultural laws: social modernization and the abolition of "regressive" practices was of equal importance.

Two additional laws which relate specifically to agriculture are the Seeds Act of 1966 and the Insecticides Act of 1968. The Seeds Act is specifically concerned with the seeds farmers use. Importantly, both it and the Insecticides Act place significant emphasis on the cultivation of Indian science over simply relying on Western science, illustrating the nationalist impulse behind these laws. For instance, the Seeds Act calls for the creation of a

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22. The Hindu Succession Act of 1956: An Act to Amend and Codify the Law Relating to Intestate Succession Among Hindus (Act no. 30 of 1956), Parliament of India § 30 (1956).

Central Seed Laboratory.[23] In addition, the Act places heavy regulations on the types of seeds that can be used and pushes for the standardization of seed varieties, all under the watchful gaze of the many regulatory and bureaucratic agencies which the act creates.[24] One such agency is the Central Seed Certification Board which, the Act explains, would serve "to advise the Central Government and the State Governments on all matters relating to certification, and to co-ordinate the functioning of the agencies established under section 8.1."[25] The Act also lists a series of "notified" seeds, which the government assumes the power to regulate for quality and set yields for efficiency: "1. Paddy HKR-126 2. Paddy SYE-2001 3. Paddy Palam Dhan-957(IET-13795) 4. Paddy Sharavathi (IR-57773) 5. Paddy JR-503(Richa)(IET-16789) 6. Paddy Pusa Sugandh - 5 (IET-17021) 7. Paddy Suruchi 5401 (MPH-5401) 8. Paddy Sugandhamati (IET-16775). ..."[26] Thus, we see an attempt to involve the Indian central government in the minute details of agriculture and to fundamentally alter how people have traditionally practiced farming. While it is always important to note that especially in India, just because a law exists does not mean it is fully enforced, the existence of this law reveals a great deal about the Congress Party's tendency towards centralization.

The Insecticides Act of 1968 is more complicated than the Seeds Act, for it regulates the appropriate usage of insecticides with an eye towards worker safety and preventing injuries.[27] While at first glance this law actually appears to be advocating for the decreased (or more careful) use of insecticides and therefore may appear to be against the adoption of new agricultural technologies, it is important to keep in mind that the heavy regulation of insecticides and worker safety in the Act are themselves a result of the impulse towards agricultural modernization: standardizing these aspects across the nation and institutionalizing provisions for workers' rights are modern ideas attempting to end old exploitative practices. As such, this law limits the power of traditional rural elites to exploit their workers at least insofar as exposure to toxic insecticides is concerned, again demonstrating the desire to end old agrarian relations. Like the Hindu Succession Act, this Act demonstrates that the new conceptions of the environment are tied into the modernization of social relations.

While not acts of Parliament, India's five year plans provide an important look into the thought process inside India's one-time apparatus of central planning, the Planning Commission. The fifth Five Year Plan of 1974-1979 sets target yields for a variety of crops, many of the same ones that are from seeds "notified" in the Seeds Act.[28] This further demonstrates how the central government sought to intrude upon traditional farming relations by setting national agricultural goals rather than simply leaving farmers to their own devices.

23. The Seeds Act of 1966: An Act to Provide for the Regulating of the Quality of Certain Seeds for Sale and for Matters Connected Therewith (Act no. 54 of 1966), Parliament of India § 54 (1966).

24. Ibid.

25. Ibid.

26. Ibid.

27. The Insecticides Act of 1968: An Act to Regulate the Import, Manufacture, Sale, Transport, Distribution and Use of Insecticides with a View to Prevent Risk to Human Beings or Animals and for Matters Concerned Therewith (Act no. 46 of 1968), Parliament of India § 46 (1968).

28. *Fifth Five Year Plan of 1974-1979* (New Delhi: Yojana Bhavan, 1973).

The laws and policy documents discussed demonstrate the legal framework that was put in place to undermine traditional farming and replace it with modern agriculture. The Five Year Plans also demonstrate the willingness to put these into practice. The ultimate goal was to change how the public interacted with the environment, using both the Green Revolution's focus on agricultural modernization and the impulse towards wilderness conservation discussed by Guha and Cronon. The laws demonstrate an important prerequisite, though: changing the nature of pre-colonial interactions with the environment in order to create this new consciousness. It would have been impossible to view the environment in national terms so long as previous modes of treating the land as simply the property of individuals, families, or communities remained unaltered.

Conclusion

Many observers now take a dim view of the Green Revolution. After all, it failed to achieve its ultimate goal of ending malnutrition in India, which has proven to be a persistent problem. Further, scholars have shown that heroic narratives holding up the Green Revolution as the cause for India's food independence are deeply flawed, and in fact the Green Revolution may well be to blame for India's current food insecurity challenges as a result of soil degradation and other factors. These shortcomings aside, the Green Revolution helped build a national polity and enacted policies that more closely entwined agriculture in the affairs of the nation, two important contributions which historians too often neglect. Importantly, these developments were part of the goal of this project: even if one accepts the arguments that the Green Revolution has not been successful at actually increasing crop yields or food security, it was more successful at its other goal of altering traditional ways of interacting with the environment and replacing them with a nationalist environmental vision. That the founders of independent India recognized the importance of rural communities and of giving these communities some stake in the national program indicates that Indian democracy's persistence may owe something to the Green Revolution. Traditionalists often argue that uprooting traditional agriculture systems had an overall negative impact on India, but they sometimes neglect to consider all that could be improved in the Indian village system as others have done. However, a still-ongoing process of mass migration from villages to cities is testament to the Indian state's failure to invest in Indian villages. Overall, the task of uprooting traditional conceptions of the environment is far from complete, but it was certainly a goal of the architects of modern India, and was one among many factors that helped create a national polity in that most unnatural of nation states.

This chapter originated as a research paper in Professor Roderick Wilson's course, History 200: Global Environmental History.

A Waterless Flood and a Humanless World: Gender and Environmental Ethics in Margaret Atwood's *MaddAddam* Trilogy

Amanda Watson | May 2020

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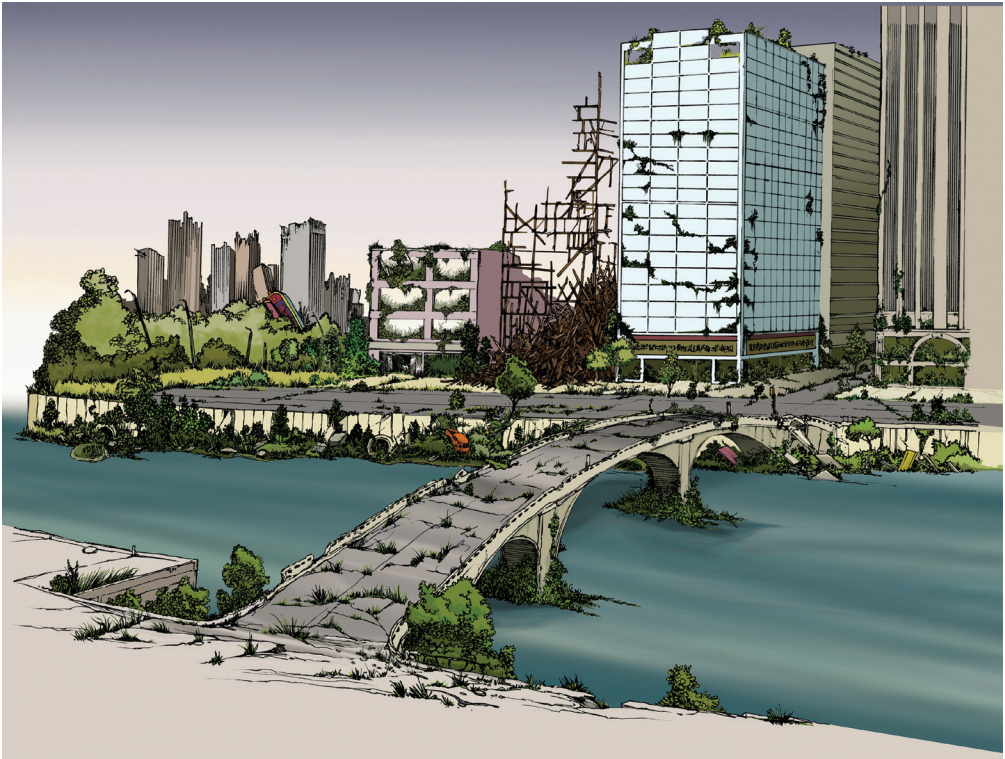
Margaret Atwood's *MaddAddam* series, a trilogy of satirical and often bizarre speculative fiction novels, imagines a world where climate change, late capitalism, and genetic modification run wildly unchecked.

The series has already inspired a significant body of work in the field of literary studies, even though it was published after the start of the twenty-first century. Much of the criticism on the novels focuses on the series' progenitors and precursors: there is an obvious Frankenstein figure in the character of Crake, a prodigy within the novels' male-dominated scientific community, who genetically engineers the enhanced race of quasi-humans known as "Crakers" as a replacement for *homo sapiens*. Atwood is likely influenced by the Romantics more generally as she shows humanity's ability to control and defy nature decimated by its own obsession with technology and progress.[1] Other criticism focuses on the theme of the "post-human" in the series. These critics analyze the post-apocalyptic picture Atwood paints of a world where very few humans remain, and where humans are greatly outnumbered by—in addition to the Crakers—myriad species

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1. For further exploration of this topic, see Sharon Wilson, "Frankenstein's Gaze and Sexual Politics in Oryx and Crake," in *The Open Eye*, ed. John Moss and Tobi Kozakewich (Ottawa: University of Ottawa Press, 2006): 397-406; Hilde Staels, "*Oryx and Crake*: Atwood's Ironic Inversion of Frankenstein," in The Open Eye, ed. John Moss and Tobi Kozakewich (Ottawa: University of Ottawa Press, 2006): 433-446.

of non-humans.[2] The subgenre of criticism I engage with examines how the religious and philosophical beliefs of the characters shape their envisioning of the post-apocalyptic world, as well as how they respond to the apocalypse once it actually occurs. Using three of the central characters of the series as case studies, I examine how one character who survives the apocalypse, Toby, does so by synthesizing the seemingly irreconcilable belief systems of two other characters.

The two characters I mentioned as holding disparate worldviews, Crake and Pilar, hold and are emblematic of two clashing worldviews in the world of the series. Crake, the eventual creator of the Crakers and the plague that destroys the human species, believes that humans are flawed due to their mating practices and fixation on art and religion, among other traits. Therefore, according to Crake, humans must be eliminated and replaced by something superior. I consider Crake's position "pragmatic" in that it seeks practical (if ethically reprehensible) solutions to humanity's problems. On the other hand, Pilar, a member of the urban religious commune known as God's Gardeners, holds an optimistic, even utopian, view of humanity's deep connections to nature and bases her personal ethics largely upon this belief. Eventually it is revealed that the two characters have connections through their shared membership in the MaddAddam network, which was ultimately responsible for the creation on a mass scale of the plague that ended the human race. While Toby, herself a member of the God's Gardeners, at times draws both from Crake's extreme pragmatism and Pilar's utopianism, she resists their shared conviction that humanity must progress past its own tendencies entirely, instead choosing to develop her own worldview based on the principle of adaptability in the face of a drastically altered environment. The failure of Crake's hyper-masculine, hyper-rationalist worldview is witnessed by the character of Jimmy, the one human intentionally left behind by Crake to lead the Crakers on their exodus to establish an ostensibly better society. This failure is contrasted with Toby's far more successful attempt to cope with the drastically altered new environment as a working-class woman against whom the odds should be stacked. The experiences of these characters, and how they are shaped by each character's respective mindset and cultural background, open up questions about issues of gender and class, which I will discuss in tandem with the ethical foundations of the character's actions.

Oryx and Crake, the first novel in the series published in 2003, depicts a society in the near future grappling with severe instability and inequality, often in the context of class, gender, and/or environmental issues. Ultimately, the title character Crake takes these problems into his own hands, engineering a pandemic through his job at a prestigious tech company that results in the elimination of the entire human race, while simultaneously engineering a replacement species for humanity that lacks all traits he finds

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2. For a more in-depth investigation, J. Brooks Bouson, "'It's Game Over Forever': Atwood's Satiric Vision of a Bioengineered Posthuman Future in *Oryx and Crake*," *The Journal of Commonwealth Literature* 39, no. 3: 139-156; Jihun Yoo, "Transhumanist Impulse, Utopian Vision, and Reversing Dystopia in Margaret Atwood's *Oryx and Crake* and Octavia Butler's *Dawn*," *The Modern Language Review* 114, no. 4 (2019): 662-681.

undesirable about humans in their current state. While the ethics of these actions are obviously questionable at best, how Crake's mindset concerning these issues develops is a much more interesting question. Thanks to the influence of powerful tech corporations that make their profits commodifying both human and animal life, the exploitation Crake participates in is unfortunately commonplace. Thus, Atwood uses Crake's character to both convey and criticize what she sees as the logical endpoint of such commodification, although attempts to entirely disengage from such practices are also critiqued in the series.

Crake and the protagonist of *Oryx and Crake*, Jimmy, meet as children in the Compounds, massive complexes where employees of the aforementioned corporations live and work, and the influence of toxic masculinity on these settings becomes quickly apparent. Crake's friendship with Jimmy is built on their mutual enjoyment of barbaric forms of entertainment, including video games depicting gratuitous violence, snuff videos, and extreme pornography, often involving violence against women. Jimmy experiences misogynistic attitudes from male figures in real life as well: his father attempts to make Jimmy, from a young age, "more practical," which is to say that his father stifles his tendency towards artistic pursuits and expects Jimmy to pursue a career in a masculinized STEM field like him.[3] Additionally, Jimmy's mother, who quit her own scientific career to raise Jimmy and frequently raises ethical concerns about the work Jimmy's father does at his company, OrganInc Farms, is often portrayed by Jimmy's father as irrational and overemotional. Her concerns eventually grow to the point that they inspire her to flee from the Compound and destroy Jimmy's father's research in the process. Jimmy's father's paternalistic mindset is pervasive; he tells Jimmy that "[w]omen always get hot under the collar" and says that in front of Jimmy that his mother is "not dirty enough."[4] While Jimmy's mother exhibits clear signs of depression throughout the early sections of the novel, Jimmy believes that her unhappiness and irritability are caused by her own irrational thoughts and beliefs. Jimmy performs comedic skits at school involving a character called "Righteous Mom," clearly based on his own mother. He describes her in gendered terms: "[i]n Righteous Mom's cosmology, Evil Dad was the sole source of hemorrhoids, kleptomania, global conflict, bad breath, tectonic-plate faultlines, and clogged drains, as well as every migraine headache and menstrual cramp Righteous Mom had ever suffered."[5] This demonstrates how the patriarchal mindset of Jimmy's father impacts him from a young age, and his problematic conceptions of women only become more prevalent as he grows older. Throughout the novel, men are consistently depicted as rational beings who always "know best," while women are frequently treated as intellectually inferior and more suited to tasks outside of the corporate workplace, namely sex and child-rearing. Jimmy's home life growing up presents perhaps the best example of this world's stiflingly traditional gender roles.

While Crake and Jimmy live out their childhoods in relatively peaceful and stable communities known as Compounds, much of the violence depicted in the videos they watch as teenagers takes place in areas outside the Compounds known as pleeblands. The distinction between these two types of settings emphasizes how divided the society has become due to class differences, resulting in extreme inequality in practically all facets of life. This class difference creates extreme vulnerability for working-class

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3.   Margaret Atwood, *Oryx and Crake* (New York: Anchor Books, 2003), 37.

4.   Ibid, 16; Ibid, 24.

5.   Atwood, *Oryx and Crake*, 60.

communities, and results in frequent sexual exploitation, as seen with the title character of *Oryx and Crake* and several characters in the sequel *The Year of the Flood*, which follows two women members of the God's Gardeners living in a working-class urban environment.

Later on, Crake genetically engineers a new species of what he views as an idealized version of *homo sapiens*. He creates the female members of this species to be free of any perceived physical flaws that could potentially make them unattractive. When describing them, Jimmy remarks how "…each one of them is admirably proportioned…[n]o ripples of fat around their waists, no bulges, no dimpled orange-skin cellulite on their thighs. No body hair, no bushiness. They look like retouched fashion photos, or ads for a high-priced workout program."[6] Both the men and women of Crake's species are described as looking "like statues," but the women appear to be developed specifically to meet the expectations of the male gaze, despite the fact that physical attractiveness is irrelevant to this new species.[7] The design of the new human-like species, whom Jimmy refers to as the "Crakers," demonstrates at every turn how masculinized the scientific world has become in the world of the novel. Perhaps the most lurid example of this is the mating ritual the Crakers participate in: when women are prepared to become pregnant, they turn blue, and select a group of four mates from all of the adult men in the community, who then mate until she becomes pregnant. Jimmy explains the apparently utilitarian nature of this adaptation: "[s]ince it's only the blue tissue and the pheromones released by it that stimulate the males, there's no more unrequited love these days, no more thwarted lust, no more shadow between the desire and the act."[8] Before creating the Crakers, Crake previously indicated his disappointment in how human sexuality is expressed, stating that, "female artists are biologically confused" because creating art will not help them attract a mate the same way it does for men, comparing men to frogs to make his point. He also derides human sexual behavior, asserting that "[a]s a species we're pathetic that way: imperfectly monogamous. If we could only pair-bond for life, like gibbons, or else opt for total guilt-free promiscuity, there'd be no more sexual torment."[9] With the creation of the Crakers, the act of sex is stripped down to its biological function; while this alteration might have some pragmatic benefits, it also demonstrates how cynical and disdainful Crake's view of the human species is. The element of choice is almost entirely removed from the Craker's sexual encounters, and regardless of gender, agency is eliminated when it comes to sex or sexuality.

The novel's complex exploration of gender is often depicted through the other title character of the first book in the MaddAddam trilogy, Oryx. It is never made clear what her backstory is: Jimmy believes he had previously seen her in pornographic videos as a child, and he also believes he saw her on the news as a girl who had been rescued from sex trafficking; Oryx herself plays with these ideas, so her history remains ambiguous to the reader. Jimmy,

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6.   Atwood, *Oryx and Crake,* 100.

7.   Atwood, *Oryx and Crake,* 155.

8.   Ibid, 165.

9.   Ibid, 165.

however, imposes a narrative upon her, asking himself about Oryx's alleged history "...how can he ever be sure there's a line connecting the first to the last? Was there only one Oryx, or was she legion?"[10] When he first sees her, "Jimmy had a moment of pure bliss, pure terror, because now she was no longer a picture—no longer merely an image...[s]uddenly she was real, three-dimensional.[11] This shows a dehumanizing quality to Jimmy's view of Oryx, he views her as an object or an image rather than a human being with agency, and thus sees no issue with projecting a narrative onto her that serves his own desires and preconceptions, disregarding how the trauma this narrative contains, whether real or imagined, might affect Oryx.

Crake's blasé attitude toward gendered violence in the novel is just one symptom of the widespread environmental and biological exploitation occurring constantly in the background of the main plot events. Jimmy frequently brings up the rampant environmental destruction the world is grappling with, but these events rarely appear consequential to his daily life: he speaks of a major meat shortage driven by climate change in strikingly broad terms: "the coastal aquifers turned salty and the northern permafrost melted and the vast tundra bubbled with methane, and the drought in the midcontinental plains region went on and on."[12] In spite of this observation, however, Jimmy seems desensitized to the causes and the magnitude of the impact of these events. Later in the novel, HelthWyzer genetically engineers a coffee plant that can be harvested by new machines rather than human labor, which "threw the small growers out of business and reduced both them and their laborers to starvation-level poverty."[13] While these protests result in a global movement against the Happicuppa corporation (a caricature of Starbucks), the upheaval has no effect whatsoever on Jimmy and Crake, who view the protests on television from the comfort of a corporate-owned summer vacation home. Crake refuses to take the protests seriously, calling the protesters "pathetic" and saying they have "shit for brains" due to the unsophisticated tactics the protesters sometimes employ, even as the movement becomes increasingly destructive and difficult to suppress.[14] Just as their male privilege allows them to avoid ridicule and discrimination in this masculinist society, Jimmy and Crake's class status allows them to live a life sheltered from the environmental degradation and exploitation wreaking global havoc, something Jimmy acknowledges when he sees the world outside the Compounds through a train window: "[e]verything in the pleeblands seemed so boundless, so porous, so penetrable, so wide-open. So subject to chance."[15] The two characters' upper-class status enables them to avoid much of the turmoil caused by climate change and other forms of environmental and biological harm, although these topics are explored in much more detail through the working-class characters in the second novel of the trilogy, *The Year of the Flood*.

Environmental exploitation and class inequality work in tandem with one another throughout the novel. Crake's university, the Watson-Crick Institute, is one of the most prestigious universities in the country and devotes itself entirely to the hard sciences.

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10. Atwood, *Oryx and Crake*, 308.

11. Atwood, Oryx and Crake, 308.

12. Atwood, *Oryx and Crake*, 24.

13. Atwood, *Oryx and Crake*, 179.

14. Ibid, 180-181.

15. Ibid, 196.

Jimmy states that "[o]nce a student there and your future was assured. It was like going to Harvard had been, back before it got drowned" (Jimmy's university, the Martha Graham Academy, primarily instructs students in the arts and humanities and lacks both prestige and funding).[16] The Watson-Crick Institute primarily conducts research in genetic engineering, manipulating the genetics of different species, usually to produce a species that somehow benefits themselves economically or otherwise. Genetic splices are also used to mitigate the effects of climate change; for instance, students create a species of flower able to withstand droughts and floods and a rock that can collect freshwater "in times of crisis".[17] Perhaps the most memorable and disturbing of the creations are the ChickieNobs, creatures that mass-produce the most commonly consumed chicken parts but that lack "all the brain functions that had nothing to do with digestion, assimilation, and growth."[18] Jimmy reacts in horror to these creatures, which resemble a sea anemone and have no head or face but rather an opening to receive nutrients.[19] The ChickieNobs, too, are a product of a masculinist rationality; all aspects of the chicken that have no practical use for human consumption are eliminated so functionality (and profit) are maximized. The structure of the institute reveals how capitalism drives the crises at the heart of the novel: rather than taking steps to actually resolve the problems plaguing the entire world, students at the institute use their cutting-edge resources to bring wealth to themselves, or to create unsustainable short-term solutions to complex long-term problems. Viewing the choice to participate in an aggressively consumerist economic structure solely as a matter of logic and not one of politics masks the very real political implications of the decision, including the commodification of women and animals. All of this reveals the insidious impact that prioritizing rationality above all else makes in the world Atwood imagines.

Crake's ethical framework is proven ineffective through the demise of Jimmy after the apocalypse: Crake's privileged and narcissistic perspective leads him to destroy the human race, leaving Jimmy to lead the Crakers to form a self-sufficient society based on pragmatic practices and belief systems. As evidenced by Jimmy's inability to cope with the entirely unfamiliar situation in which he finds himself, the privileged upbringings of many people in the Compounds do not serve them well in situations where coping with difficult circumstances is necessary. Throughout *Oryx and Crake*, Jimmy continuously returns to the Compounds after the apocalypse in search of resources, even when this strategy proves less and less effective as time passes. Jimmy, finally located by the surviving members of God's Gardeners on the brink of death, must be nursed back to health by the surviving Gardeners, who largely draw upon resources that occur naturally in the surrounding setting as opposed to making dangerous trips to the Compounds. This topic is more thoroughly explored later in the final novel of the trilogy, *MaddAddam*.

16. Atwood, *Oryx and Crake,* 173.

17. Atwood, *Oryx and Crake,* 199-200.

18. Ibid, 203.

19. Ibid, 202.

The second novel of the MaddAddam trilogy, *The Year of the Flood*, introduces an entirely new set of characters living in the pleeblands. Toby, one of two primary narrators of the novel who lives in the pleeblands, ends up working at a hamburger stand after enduring a series of personal and financial crises. At this job, she suffers sexual assault and harassment at the hands of her boss, Blanco. In order to escape her unfortunate circumstances, Toby jumps at the chance to join the God's Gardeners, a religious organization that proclaims a theology based in Christianity but incorporating various pro-environment stances as well as an ecologically sustainable lifestyle. While the God's Gardeners certainly have problems of their own, it is significant that Toby takes solace from the worst her society has to offer by entering into a community that attempts to separate itself from the environmentally destructive, hyper-capitalist characteristics and practices of broader society. However, the Gardeners importantly acknowledge that the behavior of society will result in an apocalypse, which they refer to as the "Waterless Flood." As Luke Morgan points out in his article on adaptation and resilience in *The Year of The Flood*, "[t]he Waterless Flood radically reorients Toby's ecological epistemology and ethics, but only through the near-total destruction of most of humanity—including most of the Gardeners. This destruction, however, allows for a more resilient and pragmatic form of ecological ethics and epistemology to develop, one that Toby pioneers.[20]

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Toby's ethics combine the aggressive idealism of the Gardeners with the realistic needs of her day-to-day life, resulting in an ethical framework that prevents harm to the environment without denying her basic needs. Here is an ideal that the male characters in the scientific community never even approach fulfilling. Perhaps the most relevant example of Toby's ethical perspective comes when she must confront Blanco, her sexually abusive former boss who is dying of illness and injuries, creating a personal dilemma for her. However, "her choice represents her effort to close the book on Blanco's kind of predatory consumerism...[She] mixes an organic concoction to give Blanco a painless death.[21] Blanco's death "marks a shift in environmental consciousness—a diminishing of destruction," especially as Blanco was the "embodiment of greed, lust, abuse, and disregard for life which must be ended in order to make possible a new way of living "Toby discusses her motives for ending his life internally: "Attempting to treat it would have been a waste of maggots. Still, she's just committed a murder. Or an act of mercy: at least he didn't die thirsty "[22] It may perhaps be tempting to compare Toby to Crake

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20. Luke Morgan, "'The Earth Forgives': Environmental Imagination, Adaptation, and Resilience in Margaret Atwood's The Year of the Flood," *Resilience: A Journal of the Environmental Humanities*, 7, no. 1 (2019): 29.

21. Morgan, "'The Earth Forgives,'" 37-38.

22. Margaret Atwood, *The Year of the Flood* (New York: Anchor Books, 2009), 382.

in this instance as she chooses to end Blanco's life rather than saving it; however, I argue that this comparison would be inaccurate as it downplays the differences between the characters. Crake, with his calculating power trip for what he believes as an ideal world, sees the horrific destruction of the entire human race as the best means to eliminating these social ills. However, Toby is able to create a more grounded ethical approach that considers both the moral and practical problems associated with weighty decisions, such as that of ending another's life, while looking towards a human society rid of pernicious social problems through means other than rampant destruction. In fact, her practical motive in killing Blanco is that treating him would waste valuable resources.

The Year of the Flood also expands the reader's understanding of Crake's environmental ethics. One particular scene in the novel actually shows Crake (whose birth name is Glenn) discussing the belief system of the God's Gardeners with Ren, who was once a Gardener herself. Ren states that, "Glenn already knew quite a lot about the Gardeners, but he wanted to know more. What it was like to live with them every day. What they did and said, what they really believed...Glenn never laughed at them...[i]nstead he'd ask things like, 'So, they think we should use nothing except recycled. But what if the Corps stopped making anything new? We'll run out."[23] This passage reveals Crake's apparent interest in examining the ethical principles of God's Gardeners, which is interesting since throughout the novels he rarely shows interest in anyone's ideas other than his own. Additionally, this passage shows how Crake's ethics are incompatible with a sustainable version of a human society; he cannot comprehend how society would function without the presence of a hyper-capitalist infrastructure. Crake also asks Ren, more personal things like, "Would you eat animals if you were starving?" and "Do you think the Waterless Flood is really going to happen?"[24] One noticeable difference between Toby and Ren's conception of the ethics of the Gardeners is that Toby, after the Waterless Flood, makes a conscious decision to compromise some of the Gardeners' more difficult principles in order to survive, while Ren, as with many of the other Gardeners, simply chooses to dismiss these questions. It is also worth noting that Crake could have been asking Ren about the Gardeners' belief system in order to create sustainable practices for the Crakers, as he also asks Ren how she thinks power could be reallocated and whether she thinks "God is a cluster of neurons," seemingly already questioning if he can code out any gene that makes religion appealing to a person.[25]

Pilar represents the opposite of Crake's hyper-rationalist, calculating worldview; she views the natural world as utopian, even sometimes fantastical. Perhaps the most prevalent example of this is Pilar's continued insistence that bees can communicate to one another and understand humans, therefore making it important for humans to speak to them and attempt to understand them. Toby, who learned Pilar's practices and took

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23. Atwood, *The Year of the Flood*, 228.

24. Atwood, *The Year of the Flood*, 228.

25. Ibid, 228.

over her position with the Gardeners after her passing, questions her own views of Pilar's philosophy in *MaddAddam*: "Had she believed all that? Old Pilar's folklore? No, not really; or not exactly. Most likely Pilar hadn't quite believed it either, but it was a reassuring story...[p]eople need such stories, Pilar said once, because however dark, a darkness with voices in it is better than a silent void."[26] This passage demonstrates Pilar's commitment to optimism even in the face of a rapidly declining society filled with pernicious class and gender divisions.

In *MaddAddam*, it is revealed that Pilar actually had connections to the Compounds, working as an engineer at HelthWyzer, and to the MaddAddam network, which complicates her character and how her worldview has shifted throughout her life. Late in the novel, it is revealed that Crake and Pilar actually had a close relationship, and Pilar was perhaps even somewhat culpable in the creation of Crake's deadly disease. The fact that these characters with such apparently divergent philosophies and goals could share such a relationship may indeed seem contradictory at first; however, as Hannes Bergthaller points out in his essay on humanism and sustainability in the series: "The world-view of the Gardeners clearly does not lay out a viable path to a sustainable future—the Gardeners who survive do so because of their apocalyptic beliefs, whereas their efforts to minimize their own ecological footprint are utterly insufficient to ward off the larger environmental collapse."[27] This analysis of the Gardeners' ideology demonstrates that, while more environmentally conscious than, for instance, the Corps that police the pleeblands and protect the scientists conducting unsavory experiments, the God's Gardeners as a collective do not ever construct an ethical framework that is viable for slowing, let alone stopping, any form of environmental degradation on a large scale. Instead, they consistently make references to the "Waterless Flood," presumably a reference to the flood that takes place in the Biblical story of Noah, which they believe will both arrive within their lifetimes and result in human civilization being extinguished. Adam One, the leader of the group, implores the following to his congregation in one of his sermons in the midst of Crake's plague: "Let us pray that...the Waterless Flood has cleansed as well as destroyed, and that all the world is now a new Eden."[28] Adam's hope here is not that humans will find a way to live in harmony with their so-called natural environment, but that humanity will be wiped from the face of the earth so the question of how this harmony might be accomplished no longer needs to be answered. As J. Brooks Bouson points out in her article on religion and environmentalism in the series, "Just as Atwood draws on the ideas of radical environmentalism in her account of the eco-religion of the God's Gardeners in *The Year of the Flood*, so Crake can be understood as an adherent of deep ecology and a radical and apocalyptic environmentalist who... determines to use his genius at bioengineering to save the bio-sphere by replacing destructive humans with his non-aggressive and primitive tribal hominoid species, the Crakers."[29] In this sense, the views of the God's Gardeners are no more optimistic or useful to existing human civilization than the views of Crake, something that comes through frequently in Adam One's sermons, where he muses over such questions as "Why did [God] not make us pure spirit, like Himself? Why did he embed us in perishable manner, and

26. Margaret Atwood, *MaddAddam* (New York: Anchor Books, 2013), 154.

27. Hannes Bergthaller, "Housebreaking the Human Animal: Humanism and the Problem of Sustainability in Margaret Atwood's Oryx and Crake and The Year of the Flood," *English Studies* 91, no. 7 (2010): 738.

28. Atwood, *The Year of the Flood*, 345.

29. J. Brooks Bouson, "'A Joke-Filled Romp' Through the End-Times: Radical Environmentalism, Deep Ecology, and Human Extinction in Margaret Atwood's Eco-Apocalyptic *MaddAddam* Trilogy," *The Journal of Commonwealth Literature* 51, no. 3 (2015): 348.

a matter so unfortunately Monkey-like?" Such musings sound eerily similar to Crake's previous expressions of disappointment with human evolution.[30] This rhetoric demonstrates precisely why a partial rejection of both belief systems is required by Toby and the other survivors of the apocalypse in order to create a framework that allows humanity to move forward after the apocalypse has occurred.

Through the adoption of such a framework in *MaddAddam*, Toby and Ren make valiant efforts to adapt to their new reality. Jimmy, on the other hand, remains stuck in the pre-apocalyptic world, relying upon technology and resources creating by the ruling class to attempt to sustain his existence. In addition to his frequent dangerous and impractical journeys back to the Compounds, Jimmy also exploits the Crakers for food, asking them to bring him fish and creating a mythological history of Oryx and Crake that position them as the deities that created the Crakers. However, he inevitably must acknowledge the differences between himself and the Crakers: "[t]he [Crakers] would never eat a fish themselves, but they have to bring him one a week because he's told them Crake has decreed it. They've accepted [Jimmy]'s monstrousness, they've known from the beginning he was a separate order of being."[31] Morgan is correct to point out that the apocalyptic environment offers a means to "deconstruct anthropocentric attitudes;" by remaining grounded in the world as he previously knew it, Jimmy refuses to adapt to the new non-anthropocentric world, resulting in a deterioration in both his physical and mental health. Meanwhile, characters like Toby and Ren, given their circumstances, adapt quickly and, by and large, successfully to the post-apocalyptic world.[32]

The philosophy of the Gardeners remains relevant, and perhaps even becomes more relevant, after Crake's BlyssPlus pill essentially wipes humanity off the face of the earth, with Toby and her fellow Gardener Ren being two of the only survivors. Both Toby and Ren both ensure their survival by shutting themselves inside establishments that pre-apocalypse had been centers of female exploitation: Toby barricades herself in the AnooYoo spa where customers, mostly women, would pay for treatments to attempt to secure continued physical attractiveness, while Ren works at a sex club called Scales and locks herself in the "Sticky Zone," where workers in the club were kept if it was believed they might have a contagious disease.[33] The irony that both characters end up taking shelter in these settings shows that the victims of the dominant patriarchal society were also the most capable of surviving its demise.

The Year of the Flood also grants readers a vastly divergent perspective from that of the previous novel, *Oryx and Crake*, which depicts the same society as *The Year of the Flood* primarily through the lens of upper-class male characters, while *The Year of the Flood* is told from the perspective of two

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30. Atwood, *The Year of the Flood,* 52.

31. Atwood, *Oryx and Crake*, 101.

32. Morgan, "'The Earth Forgives,'" 28.

33. Atwood, *The Year of the Flood*, 8.

working-class female characters. The use of women narrators in the second novel allows readers a glimpse into the dangers faced specifically by living women in this society. While in the first novel Oryx tells Jimmy stories of her early life as a victim of child sex trafficking, readers learn of the exploitative sex industry firsthand from Ren's and Toby's descriptions of the sex trade; for instance, Toby states about her time with Blanco that "[s]he'd be even luckier if he didn't sell her to Scales as a temporary, which meant temporarily alive,"[34] and Ren describes the sometimes violent customers she dealt with at Scales: "we…were never allowed to be alone with them: they didn't understand make-believe, they never knew when to stop, and they could break a lot more than the furniture."[35] While this solidifies the pervasive nature of sexual exploitation as described by Oryx in the first novel, *The Year of the Flood* eliminates the influence of the male perspective on the narratives of women in the story. The contrasts between the narrative positions shows the need for the incorporation of the perspectives of women into the story that are free from the male gaze, because the stories of women in *Oryx and Crake* are consistently warped to fulfill the expectations of male characters, whether it be Oryx, Jimmy's mom, or his girlfriends in college.

By contrast to the first two novels, the final novel in the trilogy, *MaddAddam*, finally reckons with how the various ideologies presented in the first two novels come together as a framework for survival for the humans remaining after the apocalypse. Importantly, these are mostly members of either the God's Gardeners or of the MaddAddam network itself, as knowledge gained from these communities gives them the ability to survive.

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The novel starts soon after the Gardener survivors from the previous novel (Toby, Ren, and Amanda) have located Jimmy, whose condition has only further deteriorated since the end of *Oryx and Crake*. Jimmy's survival depends heavily on Toby's knowledge of plant medicine she acquired during her time with the God's Gardeners, and he relies on the other women in the community to assist him in recovering from his injuries. Toby's adaptability becomes even more necessary as the group of survivors faces a new threat from two surviving Painballers, felons who participated in a brutal gladiator-style television gameshow as an alternative to prison time and have become pathologically violent as a result. Toby must adjust to the concept of sharing her space and her time with the Crakers, and quickly moves on to teaching one of the younger children of the group how to read, write, and understand vernacular English. Additionally, Toby learns that the Crakers have the ability to communicate with pigoons, a genetically engineered species of pigs with human brain tissue; she also learns that pigoons have complex thoughts and emotions on the level of a human person and thereafter must rethink her previously hostile attitude towards their presence. Toby's attitude toward both the Crakers and the pigoons represent instances where "human survivors of the apocalypse must learn to resituate their relationalities with nonhumans by redefining their criteria for

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34. Atwood, *The Year of the Flood*, 38.

35. Ibid, 130.

personhood. Thus, citizenship no longer adheres to a humanist democratic process (which nonhumans find meaningless anyway)…Atwood undermines the philosophies and positions of human exceptionalism."[36] To take this point a bit further, the fact that Toby must redefine her relationship with non-humans speaks to her tendency toward adaptability as well as her unique synthesis of Crake's and the Gardener's worldviews, as she rejects both Crake's view of animals as commodities and the Gardener's view of animals as victims of a greedy human populace who are in need of protection. Instead, her ability to view the pigoons as agents in their own right calls both upon pragmatic concerns about security as well as respect for the non-human, drawing upon what are arguably the most useful elements of these two disparate ideologies. Through Toby's new understanding, the surviving group of humans is able to forge a mutually beneficial relationship with creatures they previously deemed hostile, again demonstrating the practical advantages of her belief system.

As the novel progresses, the group of survivors slowly begins to realize that the survival of the group of humans depends on the women in the group bearing children. This leads to another complicated ethical debate: whether or not it is just to ask the women to bear the burden of continuing the human species. Ultimately, the surviving women take it upon themselves to bear children, but not necessarily in the expected manner: several women choose to reproduce with Craker men rather than the human men in the group, and the women reject the proposition made by men in the group of using the now-captured Painballers as sperm donors to father their children as otherwise the children, as stated by Ren, might have "warped genes."[37] It is interesting that the women view the human men as having warped genes, but not the genetically engineered quasi-human Crakers, and this reveals that the moral inclinations of the father matters much more than the father's species. In this way the women in the novel conduct their own genetic experiments, but unlike Crake they seek the best possible way for humans to continue existing on Earth, as opposed to Crake's quest for the best way to condemn them to death. Atwood highlights here the failure of Crake's experiment to eliminate the human race, implicitly commending the women characters in *MaddAddam* for instead making adaptability and resilience their objective. It seems intentional that Atwood would portray women as innovators in this sense, and their desire to engage in a risky genetic experiment stems not from greed or misanthropy as with pre-apocalyptic figures like Crake, but from a desire to give future generations the best chance at thriving in this new environment. As Jennings points out, "although Atwood is willing to disrupt the anthropocentric implications of the Anthropocene by utilizing a 'feminine' viewpoint to counteract the trilogy's more masculinist perspectives, she does so in order to point out how binary worldviews result in missed opportunities for reconstituting our world differently." Reimagining the barrier between human and non-human

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36. Hope Jennings, "Anthropocene Feminism, Companion Species, and the *MaddAddam* Trilogy," *Contemporary Women's Writing* 13, no. 1 (2019): 25-26.

37. Atwood, *MaddAddam*, 369.

38. Jennings, "Anthropocene Feminism, Companion Species, and the MaddAddam Trilogy," 26.

illustrates this point.[38]

Margaret Atwood's *MaddAddam* series presents what seems like an outlandish caricature of what the world might look like if the ever-encroaching influences of tech companies, big pharma, and late-stage capitalism are taken to their logical conclusion. However, the novels also make an incisive critique about the place of religious and philosophical ideology, namely environmental utopianism and technological pragmatism in such a society, and how the formation of such viewpoints is shaped by gender, class, and environmental factors. As our contemporary capitalist society must increasingly struggle with the lack of preventive action on issues like climate change, pollution, food insecurity, and other issues related to environmental damage, Atwood's novels offer both an urgent warning and, ultimately, a glimmer of hope as to how these crises might eventually impact humanity's behavior.

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INDUSTRY AND ENVIRONMENT

The Hibakusha People: Environmental Consciousness from Atomic Bombs

Matthew Fanelli | May 2020

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On August 6th, 1945, for the first time in history, an atomic bomb was used in war. The city of Hiroshima was completely destroyed in an instant.

Next, a bomb was dropped on Nagasaki. The same destruction occurred. The surrender of the Japanese, and in turn the end of WWII, followed. For the people of Hiroshima and Nagasaki, the significance of these outside reactions bears (comparatively) very little importance; these survivors (or Hibakusha, as they were later known) became victims of humanity's greatest weapon to destroy the Earth. Their experiences during and after this event are a completely unique entity in human history; neither before or since has an atomic bomb been used in war or in any other capacity with an intent of violence. As victims of nuclear violence, the Hibakusha are in a unique position of importance to understanding the experiences of human beings on this planet. In some ways, the destruction of Hiroshima and Nagasaki are an example of something more fundamental than war; complete environmental destruction via humanity's most destructive technology: the atomic bomb. Viewing the event as such opens it up to interpretation via an environmental perspective; specifically, as an environmental event that influenced a people's environmental consciousness.

The atomic bombing of Hiroshima can be understood from an environmental perspective in the following way: the atomic bomb completely destroyed the built and natural environment of Hiroshima, creating a wasteland inhospitable to human beings. From this complete environmental destruction, the Hibakusha gained a specific environmental consciousness with a focus on humanity's ability to damage our Earth and the necessity to curb this behavior. This consciousness can be seen in the writings and activism of the Hibakusha.

Historical Background and Historiography

In 1945, during the last stage of WWII, Japan and the United States were entangled in a seemingly endless war; as the battles moved closer towards the Japanese homeland, the armies fought with increased ferocity. At the same time, fatigue began to seep into the ranks of the US soldiers. With the memory of Iwo Jima and Okinawa close behind, the issue of how to force the complete surrender of the Japanese as quickly and with as few casualties as possible became a main focus of the war effort.[1] The possibility of using an atomic bomb on the Axis powers was considered for several years, including in an attack against Berlin.[2] However, after the surrender of Germany, this was no longer a possibility. Japan's refusal to surrender meant the use of atomic bombs was still a viable strategy, and by May and June of that year, the US military decided that an atomic bomb would be used, with only the specifics of strategy left undecided.[3] It was decided that amongst several possible targets, Hiroshima and Nagasaki would be bombed and, due to the possibility of Japan minimizing its impact, there would be no forewarning. Thus, the first use of atomic bombs was set in motion.

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1. Michael Kort, *Columbia Guide to Hiroshima and the Bomb,* (New York, Columbia University Press, 2007), 47.

2. Ibid, 49.

3. Ibid, 50.

In contemporary scholarship the historical significance of this event is widely discussed. The Hibakusha are seen with this similar level of significance, the sense that they are also a unique historical entity; their experiences, feelings, and responses to the bombings are unique within history and are shared and written about often. In any given article or book about them, one can often find a section detailing the social transformations of the bomb. There are many different perspectives through which one can view these transformations, all leading to various conclusions. However, there is a general consensus that the bomb created strong anti-war and anti-nuclear feelings amongst the survivors. For example, *Hiroshima and Nagasaki: The Physical, Medical, and Social Effects of the Atomic Bombings* states that, "Nuclear weapons and those who use them are, for the A-bomb victims, symbols of death and desolation."[4] In many cases, the focus of the scholarship is very direct; the Hibakusha people experienced devastation through nuclear bombs or, in an even more general sense, war. Obviously, their opinions on these two subjects will bear great significance with relation to those events.

> " The atomic bomb completely destroyed the built and natural environment of Hiroshima, creating a wasteland inhospitable to human beings. "

However, there is comparatively very little scholarship on Hiroshima and Nagasaki from an environmental history perspective; many texts detail the impacts of the atomic bomb on the natural environment of the cities, but very few understand the bombings as an environmental event with a focus on its significance to the larger human-environment dynamic. Viewing the bombing as a continuation of human-caused environmental degradation, it is possible to understand the event's significance as an environmental event that shaped a people's environmental consciousness. But, for this to be understood, one must first look at the bombing as environmental destruction.

The Atomic Bombing of Hiroshima as Environmental Destruction

The atomic bomb reduced the city of Hiroshima to ashes, both literally and metaphorically. The initial impact of the explosion destroyed nearly everything at the epicenter, as can be seen by Figure 1.[5] In this photo, the physical impact of the bomb is abundantly clear.

The landscape has been completely transformed; all of the buildings are

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4. The Committee For the Compilation of Materials on Damage Caused by the Atomic Bombs in Hiroshima and Nagasaki, *Hiroshima and Nagasaki: The Physical, Medical, and Social Effects of the Atomic Bombings*, trans. Eisei Ishikawa and David L. Swain, (New York, Basic Books Inc., 1981), 499.

5. Officers of the United States Strategic Bombing Survey, *Hiroshima before and after bombing*. Area around ground zero. *1,000-foot circles* in The United States Strategic Bombing Survey: The Effects of Atomic Bombs on Hiroshima and Nagasaki (Washington, D.C.: United States Printing Office, 1946), 7.

Figure 1: Hiroshima's ground zero before the bombing.

Figure 2: Hiroshima's ground zero after the bombing.

gone, and a uniform blanket of nothingness covers the area. However, this form of physical destruction is just one component of the environmental transformation brought about by the bomb.

Since Hiroshima was a vibrant city before the bombing, it contained a deep-rooted system of infrastructure that was ripped apart due to the bomb damage that went beyond just physical, visual damage. With physical destruction of medical institutions and the inability of the city to utilize medical resources to help its people, the medical system was a significant aspect of the destruction that cannot be understood from only visually examining the site. A government report by the United States Strategic Bombing Survey details much of this destruction. The report states that, "essentially all of the civilian hospitals and 2 large Army hospitals were located within 5,000 feet of ground zero and were functionally completely destroyed."[6] Considering the conditions of the populace after the bombing, the destruction of these hospitals and medical centers is especially significant; the city of Hiroshima, in its normal condition, could have done much to help the wounded. Although hospitals were not equipped with materials specific to radioactive atomic bomb injuries, the difference between having and not having access to medical resources after any destructive event is significant. Because of the destruction of medical centers, aiding the unwell was no longer possible within the built environment.

In addition to the medical infrastructure, the systems of water distribution also experienced heavy disruption. The ability to obtain clean water and control the water flow around one's home is an essential component of a built environment; it provides resources necessary for daily life and is present, in one way or another, in every example of an environment inhabited by humans. The United States Strategic Bombing Survey document contains details on this aspect of the destruction as well. Prior to the bombing, Hiroshima's water distribution system supplied about 90% of its inhabitants with clean water, all of it running through a treatment plant.[7] After the bomb, "the water supply as delivered from the treatment plant was probably safe but was not available to a considerable part of the existing populated sections."[8] Additionally, the sewage system was disrupted: "Some 3.5 to 4 square miles of the city were flooded due to failure of the sewage pumping stations and control gates, damaged by the bombing, to function."[9] As previously stated, the destruction of Hiroshima's water infrastructure is essential the function of the built environment.

The visually striking destruction of Hiroshima and the broken components of infrastructure constitute a destroyed environment; the original intended practice and function of this environment, as created by humans, no longer

6. Officers of the United States Strategic Bombing Survey, *The United States Strategic Bombing Survey: The Effects of Atomic Bombs on Hiroshima and Nagasaki*, (Washington, D.C.: United States Printing Office, 1946), 10.

7. Ibid, 72.

8. Ibid, 74.

9. Ibid.

exists. Furthermore, because this damage is entirely due to the atomic bomb, it can be understood as human-made environmental destruction.

Environmental Consciousness

In examination of their reflections, the people of Hiroshima experienced the destruction of their environment from human-made sources. One can extrapolate that these experiences constitute an important component to their understanding of how human beings can change their environment and, in general, the relationship between the two. However, to really grasp the significance of this experience as an agent of ideological change, one must consider sources that, regardless of the specific value expressed, talk of the event in such a way.

One can find great examples of this in *Children of the A-Bomb: Testament of the Boys and Girls of Hiroshima*, a book compiling the experiences of school children (from kindergarten to university) in Hiroshima via a series of letters. One boy, who was in 6th grade at the time of the bombing, exemplifies the ideological impact of this event in his account: "It must not happen a second time... God taught us how to 'forget'. But can I 'forget' that instant?"[10] This survivor, although not articulating a particular ideological take away from their experiences with the Hiroshima bombing, still expresses the impact of the experience on his thinking; in addition to not being able to forget the event or the significance of the day, he has developed strong convictions against the use of nuclear weapons. This demonstrates that the power of the experience has impacted the ideologies of the survivors. In another example, a more specific response to the bombing is articulated, but the significance lies in the specification of the idea as communal or, in other words, shared amongst the survivors:

> Everyday... whenever I see people with big scars from burns on their faces and necks and hands and so on... I have a feeling that I would like to run up to them so we could comfort and encourage each other. I believe this is a common spirit among all the survivors... we earnestly wish to do everything in our power to be friendly with all the people of the world and to make peace last forever. [11]

As expressed, there is a shared value of friendship and peace amongst the survivors of Hiroshima. Although this idea is much more centered around human interaction as opposed to humans in the environment, it still suggests that, from this experience, there arises communal ideas amongst the survivors.

One of these communal ideas revolves around humanity and the environment, specifically the idea that the choice to create an atomic bomb is a misuse of nature. In that same compilation of testaments by schoolchildren, there is a great example of this line of thought: "Lumber and tiles and glass and floor mats and things like that are born of the earth. The bombs and things that are used in war are also born of the earth. I think we should not misuse them. For me the day cannot come too soon to use the atom bomb for the purpose of peace."[12] This student expresses a philosophy that human beings have a responsibility to make the right choices about what to create and use from nature; the

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10. Arata Osada, *Children of the A-Bomb: Testament of the Boys and Girls of Hiroshima,* trans. Jean Dan and Ruth Sieben-Morgen (Tokyo: Unchida Rokakuho Publishing House, 1959), 417.

11. Ibid, 126.

12. Ibid, 107.

atomic bomb is an example of misuse. In some cases, there is a more direct opinion about the individuals who created the bomb as opposed to society in general: "Those scientists who invented the uranium atomic bomb—what did they think would happen if they dropped it... They knew the answers from the results of their tests."[13] Although not explicitly a mention of the environment, there is still an expression of anger towards scientists, towards those that created the bomb and used it for destruction.

Even in contemporary sources detailing the Hibakusha's experiences there is an expression of the atomic bomb as a misuse of nature. In an interview conducted by the Red Cross with three Hibakusha survivors, the questions asked are more focused on their philosophical takeaway from the experience. The first survivor interviewed, Dr. Masao Tomonga, is asked about any lessons learned from the experiences in his life. He responds:

> Human civilization developed nuclear fission technology, which became, on the one hand, nuclear weapons, and on the other hand, nuclear power stations... These are the two faces of nuclear technology. The outcome of my seventy years of observation is that the Japanese population, as well as the rest of the world's citizens, need to seek a way towards world peace, without nuclear weapons.[14]

> " Human beings have a responsibility to make the right choices about what to create and use from nature; the atomic bomb is an example of misuse. "

This survivor's reflection reveals an understanding of the capability mankind has with atomic technology; to destroy or to build. Having witnessed the destruction of his home, he hopes the world strives for the latter. Another contemporary source where a similar voice can be heard is the Hiroshima Digital Archive, a website containing the accounts of various Hibakusha survivors. Kanzo Iwasa, who was 16 at the time of the bombing, said this in relation to the Fukushima nuclear disaster:

> You may think these two are different kinds of matters; one is the damage by nuclear weapons as war injury and the other is that of nuclear power plants caused by a natural disaster. You're right. But please consider carefully. Both disasters had happened as a result of human beings' application of science and technology.[15]

The significance of this survivor's perspective is the application of his ideas on a more general concept than specifically the use of atomic bombs. His beliefs extend to another environmental disaster with an awareness of its root cause; humanity's attempts to master atomic fission. In this way, he

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13. Ibid, 265.

14. Vincent Bernard and Hitomi Homma, "After the atomic bomb: Hibakusha tell their stories," *International Review of the Red Cross* 97, no. 899 (2015): 513, doi: 10.1017/S1816383116000242.

15. Hiroshima Archive Production Committee, "Hiroshima Archive," Hiroshima Archive, accessed December 1, 2019, http://hiroshima.archiving.jp/index_en.html.

demonstrates an awareness of the importance of human being's manipulation of nature (in this case atomic fission) within the conversation of damage from nuclear technology.

In all of these cases, the Hibakusha express ideas or beliefs in response to their experiences that are not simply anti-nuclear or anti-war. They demonstrate an awareness of the role humans have in manipulating nature that has caused their tragic experiences. Furthermore, they express an understanding that this manipulation of nature needs to be done carefully or destruction will continue to occur.

Environmental Consciousness in Activism

With an understanding of the threat nuclear technology posed to destroy the world, some Hibakusha turned to activism to make sure another disaster like Hiroshima or Nagasaki never happened again. In these efforts, an awareness of humanity's ability to damage the environment and the necessity to stop this can be found. Often these efforts are focused not just on Japan, but internationally, further establishing the more general awareness of the global environment and its relationship with humanity.

In 1977, during an international symposium on the bombings, one committee speaker, himself a Hibakusha, said the following in an attempt to spread the story of the Hibakusha: "Listen to the voices of the Hibakusha who are looking to eternal things and testifying to humanity from conditions in which human beings, society, civilization and the natural environment were all reduced to nothingness."[16] In order to spread the message of the Hibakusha, he demonstrates two important ideas that both express an environmental consciousness: first of all, an awareness that the Hibakusha advocate for "eternal things", or ideas beyond just their own situation. Although this isn't explicitly about environmentalism, it still allows for the inclusion of bigger ideas which could and often do involve the environment. Secondly, he explicitly mentions that the Hibakusha experienced the destruction of their natural environment and (inexplicitly) their built environment (or as he states, "society" and "civilization"). His actions as an activist show his environmental consciousness.

Other than the sharing of their experiences, as they did during the 1977 summit, the Hibakusha had many other methods of activism to stop the spread of nuclear technology. Sometimes these methods were very direct, such as speaking to the United Nations. In one such case a Hibakusha stated, "We reject both military and peaceful uses of nuclear energy. Let us not forget Bikini, Nevada, Three-Mile Island and Chernobyl."[17] Here, one can see there is an awareness of the connection between these events; they are all nuclear environmental disasters. The speaker here understood that they were all due to an underlying environmental issue and wished to stop anything like them from happening again. Another example can be seen from a Hibakusha protest over French atomic bomb testing.[18] Again, there was concern with nuclear testing, and not just nuclear warfare, as an anti-environment, destructive entity. This concern shows the Hibakusha have a heightened sense of importance with this issue.

16. Japan National Precatory Committee, *A Call from Hibakusha of Hiroshima and Nagasaki: International Symposium on the damage and after-effects of the atomic bombing of Hiroshima and Nagasaki,* (Tokyo, Asahi Evening News, 1978), 30.

17. Department for Disarmament Affairs, *The Non-governmental voice at the United Nations Third Special Session on Disarmament,* 31 May- 25 June 1988, 77.

18. N.A., "Japanese Protest French A-Test," *The Japan Times.* September 1959.

In these cases, as well as many more, the activism of the Hibakusha spurred from an understanding that their situation was not caused specifically from nuclear bombs, but nuclear technology in general. This is evident in the nature of their activism, because it focuses on the larger environmental issue of nuclear technology.

Conclusion

The Hibakusha people lost their environment at the hands of a human-made technology; everything they built was destroyed and they became a people without an environment. From these experiences, they understood the relationship between humanity and the environment in regard to our human tendency to manipulate it, and the need to control this behavior in order to prevent environmental destruction. This belief expresses itself both through the Hibakusha's thoughts on Hiroshima, Nagasaki, and the world at large, as well as their activism following the destruction of their environments. This event shows the deep connection humans have to the environment and how great the significance of its destruction can be to our understanding of the world.

A version of this essay was originally written for the course History 200: Global Environmental History with Professor Roderick Wilson.

Hazardous Energy and Lake Michigan

Sarah Gonya Gediman | May 2020

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In August 1953, Midwesterners gathered at the very tip of Michigan's lower peninsula along the shores of the Straits of Mackinac, where lakes Michigan and Huron meet.

Newspaper articles from across Michigan, Indiana, and Ohio had promised them a chance to witness "all the marvels of Modern Science."[1] The Bechtel Corporation, an engineering firm responsible for projects including the Hoover Dam and the Chernobyl Confinement Shelter, was constructing a pipeline in the Great Lakes. It would run from the Alberta Tar Sands to North Dakota, across the top edge of the United States, through the state of Michigan, and empty into oil refineries near Sarnia, Ontario. It was to be the longest petroleum pipeline in North America at that time, known as Line 5.[2]

The portion of Line 5 that snaked below the Straits of Mackinac attracted a crowd from across the Midwestern region. An article from the *Detroit Free Press* published shortly before construction began reads, "Even before the first cable can be pulled into the water at Pt. La Barbe, bleachers for the audience and stages for movie cameras must

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1. "Pipe-Line Laying Is Top Engineering Feat," *Detroit Free Press*, August 10, 1953, https://search-proquest-com.proxy2.library.illinois.edu/docview/1817891098/E88A5D886CC04885PQ/2?accountid=14553.

2. Robert Kellum, "One of the Biggest Engineering Jobs of the Year Anywhere," *Indianapolis Star*, September 9, 1953, https://search-proquest-com.proxy2.library.illinois.edu/docview/1890927820/E88A5D886CC04885PQ/4?accountid=14553.

be thrown up. A huge electric scoreboard will tell watchers how the work is progressing."[3] Another paper urged people from Indianapolis to travel roughly 500 miles to see the spectacle. In much the same way as another town might prepare for a large sporting event, Mackinac City, Michigan prepared for a pipeline.

How do we understand the excitement that surrounded the creation of Line 5? Although perhaps there were many reasons why Americans were thrilled at the big machinery and engineering know-how on display at Mackinac in 1953, the purpose of this chapter is to focus on what made this a stirring cultural moment. The excitement of Line 5 can be attributed to two things that characterize the petroleum energy regime. First, industrial structures which are operational are therefore considered "complete" and out of the public eye. And secondly, the abundance of oil and the energy it produces has allowed the naturalization of the concept of petroleum use. Together, these qualities have produced a culture that prioritizes energy access of all kinds over the well-being of those which use it.

The problems with the oil industry permeate every facet of life, but they are significantly more cultural than political. While it is extremely important to limit fossil emissions through legislation to mitigate climate change, pollution, and disease, the reasons these externalities exist at all are cultural; the side effects of petroleum dependence are severe and reach into every aspect of life. They are permitted not because a panel of experts weighed the pros and cons of oil extraction and combustion and decided that oil energy made sense, but because oil energy has become the cultural norm.

> " Petroleum has become fundamental to the everyday actions of being a human. "

It is important to understand just how dependent on oil we are as a society, and why that dependency is harmful, in order to be able to move away from it. But this kind of reckoning is not easy. Timothy Mitchell argued in his book *Carbon Democracy* that the very model of democracy which we idealize is dependent on oil access. The properties of oil allow the medium to be transported quickly and cheaply, with limited physical labor. This, in turn, allows a delicate balance of oil companies, individual labor, and an immense scale of easily accessible energy use that has defined modern democracies.[4] The fundamentality of petroleum to the modern world cannot be overstated, but it is important to think about the reasons why oil has become such a staple of life in the US. Oil became the bedrock of modernity before anyone understood its consequences; most of the laws that regulate the petroleum

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3. "Pipeline to Be Sunk In Straits," *Detroit Free Press*, August 2, 1953, https:/search-proquest -com.proxy2.library.illinois.edu/docview/1817908815/E88A5D886CC04885PQ/1? accountid=14553.

4. Timothy Mitchell, Carbon Democracy (London: Verso, 2011).

industry were made in response to industry action.

One major criticism in the field of energy studies has been the disciplinary focus on oil as opposed to other energy sources. Christopher Jones called this "Petromyopia: the over-privileging of petroleum accompanied by the relative understudy of other energy topics."[5] There is no question that oil has been studied more often than other energy sources in energy studies. It is an exciting, obviously important topic that is easily legible to those outside the immediate field. However, oil should be studied both for its own sake, and for the sake of understanding how it has shaped other forms of energy, commerce, and systems of thinking. The mining of coal, production of solar cells, and construction of hydropower and nuclear infrastructure all depend on petroleum-powered energy and transportation. Oil use has also normalized systems of thinking which allow egregious costs for energy use. It is essential to study petroleum in order to understand how the impact of oil has superseded the energy medium itself; oil has allowed Americans to become so habituated to thoughtless energy use that we have become willing to accept grave health and environmental risks to maintain access to energy.

Invisibility of Petroleum

Petroleum is compact, cheap, and easily transportable, but the property which makes it the most valuable is that it is easy to forget. This forgettable quality of oil is enabled by a widespread misunderstanding of the physical infrastructure which supports it. In his book *Beyond the Big Ditch*, Ashley Carse uses the Panama Canal as an example to illustrate the ways in which industry is misunderstood as "finished" when it becomes functional. In reality, there can never be a completed industrial project because the relationships among built structures, humanity and natural forces are dynamic. The ability for the canal to *function*, for cargo ships to cross between oceans through a passage which had once been land, allowed lawmakers and citizens to label the canal "complete."[6] In Michigan, the ability of Line 5 to push oil through the Great Lakes meant that the project could likewise be misunderstood as "complete." But this is misleading. The physical reality of infrastructure is a constantly changing relationship between humans, built structures, and natural forces. Completion is impossible.

Carse also argues that infrastructure is a result of political moments.[7] In the 1950's, when Line 5 was built, the United States was still riding a wave of postwar growth characterized by the idealization of consumerism. As factories changed from producing wartime goods to civilian commodities after WWII, the ideal American life included things like in-home appliances, mail-order goods, and ubiquitous cars in a way that had not been seen before. The increase of material comforts in the 50's meant that oil and the energy it provides were essential to produce, transport, and use many of these products. The celebratory nature of the pipeline installation in the Straits of Mackinac embodies both this spirit of consumption and the might of infrastructure.

The purpose of Line 5 was to enable the movement of compact forms of energy across a continent to then be used to produce electricity, move cars, and manufacture products.

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5. Christopher F. Jones, "Petromyopia: Oil and the Energy Humanities," Humanities 5, no. 2 (June 2016): 36, https://doi.org/10.3390/h5020036.

6. Ashley Carse, *Beyond the Big Ditch: Politics, Ecology, and Infrastructure at the Panama Canal* (MIT Press, 2014).

7. Ibid..

But there were no crowds at either end of the pipeline, where a glimpse of the decidedly un-charismatic and yet all-important petroleum sludge would have been possible. Instead, people came to watch 250 men wrestle metal, stone, and chains into the lakes. The crowds who came to watch the sinking of Line 5 cheered, as rough waves and wind thrashed the chains used to lower steel into the freshwater. They celebrated the tactile manipulation of nature, then they went home. If they ever used energy that traveled through Line 5, they never would have known. The onlookers were there to witness the greatness of infrastructure, and to cheer for what it signified in their lives: to live with a wealth of physical goods provided by an energy regime which spanned the continent.

In spite of its once mighty reputation, Line 5 is has come under scrutiny over the past decade because it has become increasingly dangerous with time. In the Straits of Mackinac, the steel pipes which garnered regional fame in the 50's are quite literally crumbling. The enamel meant to protect them from disintegrating has worn off, they are covered in orange rust, and many of their physical supports have been disconnected from the lake floor by nearly seven decades of powerful currents. A series of small leaks have spilled an estimated 1 million gallons of oil into the Great Lakes over the past sixty-seven years. The structural integrity of Line 5 is disintegrating, and yet the University of Michigan Water Center deemed the Straits, "the worst possible place for an oil spill."[8] As the Pipeline ages, the invisibility of both the structure and the oil it carries, which were once a great merit, have become a threat to the 40 million people who depend on the Great Lakes for drinking water. Line 5 exemplifies the great vice of living within a petroleum-based ecosystem: to exist without understanding the resources (and their associated risks) on which we fundamentally depend.

Naturalizing Petroculture

While Line 5 has been slowly disintegrating for almost seven decades, the energy that courses through it has fueled the development of current culture. Stephanie LeMenager uses the term "petroculture" to describe how oil is fundamental to every aspect of American life. In a recent interview LeMenager put it this way: "Every element of culture has a material basis and owes itself on some level to some form of energy and extraction. Petroculture is modern culture. Petroculture is normative everyday culture".[9] Oil and other petroleum products are essential not only for cars and planes, but for industrialized agriculture, global supply chain networks, cavity fillings, and lunchboxes. Even the ability to schedule things is based on the reliability of petrol-powered transportation. Petroleum has become fundamental to the everyday actions of being a human.

The automatic fashion in which most people depend on oil and its products parallels many notions of what is natural; the ubiquity of oil has created a

8. "Worst Case Oil Spill Straits of Mackinac," Graham Sustainability Institute, March 26, 2016, http://graham.umich.edu/water/project/mackinac-oil-spill.

9. *Stephanie LeMenager: What Is Petroculture?*, accessed April 11, 2020, https://www.youtube.com/watch?v=20iug3iViiA.

new type of ecosystem that uses petroleum to support human activities of all kinds. Even the ways in which we acquire food, or bioenergy, to fuel our bodies are based on oil. Ecosystems as defined by biologists include animals which use bioenergy to move themselves to places where they are likely to find food. They then consume another animal or plant material which has also arrived in the location based on a different form of bioenergy. Many animals then rest their bodies on wood, stone, or mud. We call this natural. Likewise, a human in a town or city uses petroenergy in a car, bus, or train, to move across bitumen-coated roads from their home to a grocery store. They then buy food that has also been brought to the cash register with petroenergy and is likely wrapped in petroleum-based plastic. Petrochemicals which comprise credit cards are then used to pay. In this way, the central functions of the ecosystem most individuals experience is entirely based on oil. We don't use the word natural to describe cars, roads, or the plastic bags used to carry vegetables home from the store. But, like plants in an ecosystem, these oil-based substances and actions are generally accepted as part of what is familiar and ordinary. Oil access and use has surpassed the status of habituation; it has become a fundamental component of the physical ecosystem in which people live.

> " Oil access and use has surpassed the status of habituation; it has become a fundamental component of the physical ecosystem in which people live. "

For some time, scholars have been interested in the idea of infinite growth and consumption as progress. This is the so-called Myth of Progress; the idea that society is always increasing the scale and efficiency of resources use in a way to increase comfort. This of course depends on widespread access to resources including energy. Recently environmental scholars have argued that the mission of ever-increasing growth and economic expansion is not only a threat to the planet, it is impossible to sustain.[10] But the term growth is sloppy, and methods of measuring and predicting the flow of goods in the future are consistently flawed. Instead of asking if infinite energy access and statistical economic growth are possible, the more practical question is this: If the expansion of consumption is to be pursued indefinitely, what it will cost, and what has it cost already?

The energy that supports current institutions has required a restructuring of the public ethic that prioritizes access to energy resources above the people and causes the energy is meant to serve. While the most obvious vice of oil consumption is climate change and its consequences, the process of producing and transporting oil also threatens human health and wellbeing. Access to both oil itself and the comforts it produces was intended to improve the well-being of humanity. It has since created a public ethic which prioritizes access to energy over the conveniences that energy was intended to support. Our current setup makes access to an abundance of energy so fundamental that the building and using of certain energy infrastructures which pose significant risk to public health have become normalized. In fact, deep flaws that were naturalized in petroleum consumption are now deemed acceptable for other sorts of energy infrastructure.

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10. Tom Wessels, *The Myth of Progess: Toward a Sustainable Future* (University Press of New England, 2013).

The Portable Energy Ethic

Ten years after Line 5 was built, the Bechtel Corporation began developing plans for a different project downstate; the Palisades Power Plant in South Haven, MI. The power plant has the capacity to produce 811 megawatts of nuclear energy, and its initial industrial popularity was even more extreme than that of Line 5. From the time of its conception, the Palisades Power Plant was intended to become both a source of energy and a tourist attraction. The State of Michigan expected so much public interest in the nuclear reactor that the land next to it was designated a state park, so that tourists could picnic there after their nuclear tours. It was meant to be a destination for people who were prepared to be awed by industry. Newspapers called the powerplant the "fairy godmother" that had come to Van Buren County. Like access to oil, access to nuclear energy once promised an abundance of comfort. It would enable detachment from the energy source itself with the same misplaced notion of completion as the fossil fuels it was meant to replace. However, like oil, the great promise of nuclear energy proved much more dangerous than anticipated, and the side effects were justified as easily as those of the petroleum energy regime.

While the public is no longer allowed to tour the Palisades Power Plant, the nuclear energy source has remained present in local discourse. As in the case of Line 5, the intended ease of energy acquisition at Palisades has been obscured by structural problems. Over the course of its lifetime, the Palisades Power Plant has had a striking number of safety breaches. The pipelines in the water refueling tank have leaked nearly every year since its construction in 1971. In 2007, nuclear contaminants were found in the groundwater surrounding the nuclear plant. In 2012, radioactive water leaked from a storage tank into Lake Michigan. The fairy godmother of Van Buren County turned out to be a nearly constant maintenance project, and a biohazard to the community it was meant to support. Even so, it currently provides 20% of the electricity in southwestern Michigan and has been allowed to continue to operate in spite of its alarming safety record. In this case, access to energy has been deemed more important than the health of the community it is intended to power. The decommission of the Palisades Power Plant has been discussed and postponed for years; while residents claim it is unsafe, various owners of the power plant (it has changed hands frequently) claim that it is safe and are consistently proven wrong. The power plant is currently scheduled to be powered down in 2022.

Power Dynamics

The power dynamic between people and the environment has become such that people are at the service of the energy we depend on. Both Line 5 and the Palisades Power Plant are failing structurally in ways that were unforeseen when they were built. Both threaten the drinking water and health of the people who live around them. These shortcomings have been left largely unaddressed because of the public notion that the power they provide is essential. But the idea of energy access serving humankind is an illusion. The Myth of Progress could be renamed the Myth of Order – the energy which was meant to improve the human experience has required

immense sacrifices. Now, instead of mastering energy systems to improve the human experience we find ourselves at their mercy. The celebration in August of 1953 of widespread and easy access to energy more accurately marked the wedding of human society to volatile and dangerous energy regimes.

A piece at the Krannert Art Museum's exhibit *Hot Spots* by Erich Berger and Mari Keto, called *Open Care* (2016) explored the possibility of a more thoughtful energy future. In this sculptural and conceptual piece, the artists put "nuclear waste" within urn-like structures that, in their sliver of a fictional world, were to be passed down through generations until they were no longer radioactive. According to the plan, this nuclear waste would travel through generations, protected as a sort of family heirloom. But once a generation, the family would open it and, according to a manual passed down alongside the waste, check to see if the levels of radioactivity were harmful. The decomposing uranium would sit on people's mantles, in their China cabinets, and on the dressers in their bedrooms.[11] The piece makes an important point. Of course, it may seem laughable that energy sources or their byproducts should be cared for so intimately – the idea of having a harmful industrial substance in one's home is nonsensical itself. Moreover, the idea that it could become a tradition to care for your ancestor's nuclear waste seems almost offensive, like a perversion of human relationships. However, by naturalizing petroleum we have reached a level of intimacy with our primary energy source that is at least as absurd. We still pass on relics of our energy sources to our children, though it is not by holding small pieces of nuclear energy in decorative containment boxes. Instead, we absorb petroleum fumes and microplastics into our bodies; Small pieces of oil line our lungs and cause respiratory illnesses, and microplastics work their way into muscle fibers and cause cancer. Smog from generations ago continues to affect the health of those living today. As in Berger's and Keto's piece, the way we consume energy is carried over several generations, but the lack of responsibility and thought, which at first seemed satirical, is quite literally killing us.

> " Access to energy has been deemed more important than the health of the community it is intended to power. "

The current energy ethic is far more intimate than having a decorative piece of nuclear waste in the home. The nuclear waste that has come from the Palisades will continue to emit radiation throughout the lives of generations to come. But instead of caring for it in small doses generation by generation, the waste in the Palisades will either remain in its reactor indefinitely or be dumped in a place deemed somehow 'disposable'. The oil that passes through Line 5 will be burned and contribute to disease and climate-change related suffering. If the pipeline is not shut down soon, the 67-year-old pipes are very likely to rupture, spilling crude oil into the Great Lakes, rendering the water undrinkable, and causing millions of dollars-worth of economic damages. The failure to take responsibility for our energy use and consumption is further evidence of the invisibility and naturalization of the current energy regime.

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11.   Erich Berger and Mari Keto, "Open Care", Steel, Bronze, Gold, Paper, Fur, 2020. Hot Spots Exhibit, Krannert Art Museum, Champaign, IL.

There are a number of self-evident problems with naturalizing oil; the threat of spillage, the contribution to climate change, and increased respiratory disease and cancer rates are just some of them. Whenever there is something upsetting or harmful at a large scale, it is tempting to cast blame. So, who is responsible for petroculture and its naturalization, and the resulting naturalization of dangerous energy systems? The consumers who casually buy plastic, burn gasoline, and turn on the power in their homes without much thought should not be vilified for engaging with their ecosystem. Nor should the self-proclaimed environmentalists who criticize the use and transport of oil be mocked for their complacency in the systems they criticize. They all live in a world so oil-soaked that debilitating hypocrisy is inevitable, and it is cruel to blame individuals for engaging with what they understand to be natural. People are unable to engage with the many other things that are natural to them – getting an education, traveling to see family, even going to the grocery store, without employing power from either oil or another detrimental energy medium. In this way much of what is most human is now understood and experienced in ways that depend on noxious forms of energy.

Naturalizing oil has enabled an ideal of progress centered around constructing an ever-expanding synthetic ecosystem. To ask people to give up oil would further convolute the power dynamic between humans and petroleum. The problem with allowing petroleum, the other harmful forms of energy it has enabled, and their vices to become natural is that energy use ultimately harms those who it supposedly exists to help. To ask people to drastically reduce their energy consumption for the sake of reducing the consequences of deeply flawed energy regimes would also be to ask them to compromise the aspects of their humanity which they understand in oil-based terms. This exacerbates the problem it is intended to fix: that energy systems cause human problems. Instead, we must find a way to take responsibility for our consumption in ways that enhance our humanity instead of eroding it, and ultimately find energy sources which don't force a decision between being healthy and being human.

III

ENVIRONMENTAL JUSTICE

Speculative Food Justice: Food Deserts, the Alternative Food Movement, and How to Proceed

Emily Etzkorn | May 2020

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Sometimes, when I go to my grocery store on the northside of Chicago, it feels like I could be walking onto a movie set. I'm greeted by a variety of food options: shiny apples, plump tomatoes, just-misted herbs, fresh-baked bread, fresh-cut deli meats/cheeses, freshly-squeezed fruit juice, etc.

But many people who live in the same city don't experience a similar diversity of food options when grocery shopping. When those folks go grocery shopping, they might have to travel far to get nutritious foods, or try and make do with what is available in their vicinity. They may have to resort to one of the many corner or liquor stores nearby, where they aren't greeted by mountains of shiny fruits and vegetables, but by shelves of shiny chip and cookie bags.

According to a 2017 report by the U.S. Department of Agriculture, it can be estimated that 17.7 percent (an increasing number) of the nation's population lives in areas that are low-income, low-access, and are more than half of a mile, for urban areas, and ten miles, for rural areas, away from the nearest supermarkets.[1] Food deserts can be defined as geographic areas where residents' access to affordable and healthy food options, especially fresh foods like fruits and vegetables, are restricted or even nonexistent due to the absence of reliable grocery stores within convenient travelling distance.[2] In the U.S., such areas are most commonly found in communities of color and low-income neighborhoods. While there are a handful of different measures by which we can estimate how many people are living with limited access to food, it is evident from several assessments that a conclusively overwhelming number of Americans are suffering the harsh consequences of living in food deserts.

Many Americans, particularly people of color (POC) and/or low-income people, are overweight and yet, paradoxically, malnourished. POC and low-income families are presented with a vast variety of processed foods inside the liquor stores and mini-marts that dominate many of their neighborhoods, choices which do not lend themselves to a well-balanced diet.[3] Why is it that food deserts disproportionately affect communities of color and low-income areas specifically? A primary reason is the United States history of environmental racism.

Racism has shaped the very geography of American life across a number of socio-historical periods—including the country's founding—linking the exploitation of POC

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1. "Documentation," Food Access Research Atlas, USDA Economic Research Service, accessed October 31, 2019, https://www.ers.usda.gov/data-products/food-access-research-atlas/documentation/.

2. "Food Deserts*," Food Empowerment Project, accessed September 25, 2019, http://www.foodispower.org/food-deserts/.

3. Alison Hope Alkon and Julian Agyeman, *Cultivating Food Justice: Race, Class, and Sustainability*, (Cambridge: The MIT Press, 2011), 149.

and of natural resources.[4] Furthermore, as in Park and Pellow's study of racial formation in Silicon Valley, they argued that "racial formation in the United States has always been characterized by an underlying link between ecological and racial domination," emphasizing that attention to ecological degradation heightens our understandings of race and racism in meaningful ways.[5] One blatant example of environmental racism in the U.S. is a practice known as "supermarket redlining."[6] Redlining is the discriminatory practice—by banks or insurance companies—of denying services or refusing a loan to residents within certain geographic areas with particular ethnic and racial compositions because they are deemed financial risks. Similarly, supermarket redlining refers to when large retailers relocate their grocery stores from inner city areas to suburbs, seeking higher profits and more room for parking lots.[7] When corporations avoid low-profit areas, mass departures of residents reduce reliable access to food for low-income and minority people.

Another geographical determinant of food deserts is the practice of green gentrification, where residents and their community spaces are displaced by high-end housing and other developments.[8] As illustrated by a conflict researched by Anguelovski, this practice of closing down multi-ethnic grocery stores for the opening of a Whole Foods store in Jamaica Plain, Boston, for example, created feelings of displacement and fears of erasure by eliminating the most affordable and authentic food options in the neighborhood.[9] Ecological gentrification is also strongly correlated with changes in demographic trends and property values, eventually raising the prices of basic amenities in the community, most importantly of fresh food.

Other studies show that there are four times as many grocery stores in predominantly white neighborhoods than predominantly black neighborhoods,[10] and that even when there are small grocery stores in black neighborhoods, many small grocery stores in black neighborhoods sell foods at extremely high prices compared to supermarkets and larger stores.[11] Given these facts about the geographical location of grocery stores in underserved neighborhoods, it is important to note that this is not the only hindrance in being able to buy fresh food.

The second reason for the disproportionate impact of food insecurity on POC and low-income people in these areas is the U.S. government data collection methods. According to The Food Empowerment Project, the North American

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4.   Ibid, 27.

5.   Cited in Alkon and Agyeman, 26.

6.   Alkon and Agyeman, 151.

7.   Ibid, 151.

8.   Isabelle Anguelovski, "Alternative Food Provision Conflicts in Cities: Contesting food Privilege, Injustice, and Whiteness in Jamaica Plains, Boston," *Geoforum* 58 (2015): 185.

9.   Ibid, 185.

10. See Alkon and Agyeman.

11. See Samina Raja, Changxing Ma, and Pavan Yadav, "Beyond Food Deserts," *Journal of Education and Research* 27, no. 4 (2008): 469-82.

Industry Classification System (NAICS)—a standard used by federal statistical agencies to classify business establishments—statistically lumps together small corner grocery stores with supermarkets like Whole Foods.[12] In other words, a community with zero supermarkets but three corner stores that offer liquor and snack food would be categorized as having three retail food outlets, even though the food offered there may be limited and consist mainly of fatty or junk foods.[13] Low-income and minority people must additionally worry about the judgment of individual convenience store owners. Some convenience stores that *do* sell a few fresh fruits (apples, oranges, bananas, etc.) sell them individually and are often left without price tags.[14] Thus, the customers are at the discretion of the cashier in determining the cost of fresh food. It is a scenario that can easily be exacerbated by language barriers between the customer and the employee, which is also more likely to take place in a community of color than a predominantly white one.

> " To create a truly inclusive table where everybody has a seat, structural racial and social implications have to be taken into consideration when envisioning food justice. "

Thirdly, as if POC and people with low income were not marginalized enough, the overall economic *inflation* of fresh food prices and *deflation* of fatty food prices did not especially benefit these groups. Recent research in Oakland and Chicago demonstrates that price or high cost is actually the primary barrier to healthy food access, relative to proximity.[15] According to the Food Empowerment Project, between 1989 and 2005, the overall price of fresh fruits and vegetables in the U.S. increased by nearly 75 percent, while, in the same period, the average price of fatty foods decreased by more than 26 percent.[16] This reduced access to affordable fresh foods and increased access to inexpensive fatty foods demonstrates just one of the many systematic forces that perpetuate food deserts in low-income and minority communities.

As a result of this long-standing environmental racism against communities of color and low-income areas, these residents suffer various consequences of constrained access to healthy foods. Such groups of people in food deserts encounter statistically higher rates of obesity, type 2 diabetes, cardiovascular or heart disease, and other diet-related conditions compared to the general population.[17] Studies show that excessive body weight puts people at a greater risk for serious and potentially fatal health disorders, especially heart disease and diabetes, which are currently the first and seventh leading causes of death in the U.S., respectively.[18] According to the Center for Disease Control

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12. "Food Deserts*," http://www.foodispower.org/food-deserts/.

13. Ibid.

14. Ibid.

15. See Alkon et al, "Foodways of the Urban Poor," *Geoforum* 48 (2013) and Yuki Kato and Laura McKinney, "Bringin Food Desert Residents to an Alternative Food Market: a Semi-Experimental Study of Impediments to Food Access," *Agriculture and Human Values* 32, no. 2 (2014).

16. "Food Deserts*," http://www.foodispower.org/food-deserts/.

17. Ibid.

18. Ibid.

and Prevention, the incidence of diabetes among U.S. adults doubled between 1996-2007, with type 2 diabetes—which is a variant of the disease often caused by obesity—accounting for up to 95% of these cases.[19] Only twenty some years ago, type 2 diabetes was virtually unknown among people under 40 years old, but the past decade or so has seen a tenfold increase among adolescents, demonstrating an overall rise in youth obesity rates.[20] The greatest increases in the incidence of type 2 diabetes, however, have occurred among Native Americans, African-Americans, and Latinos of all age groups, compared to their white counterparts.[21] This research demonstrates the inextricable correlation between food insecurity and diabetes rates along racialized lines.

In terms of heart disease, which is the leading cause of death in the U.S., one of the main causes of the illness is a diet high in unhealthy fats and low-density lipoprotein (LDL) cholesterol, found in the types of fatty foods most typically available in food deserts.[22] Just as people of color suffer from insufficient food access compared to their white counterparts, the U.S. Department of Health and Human Services Office of Minority Health maintains that heart disease also kills more black people every year than white people, despite the fact that white people make up nearly 80% of the U.S. population, while black people comprise slightly under 14%.[23] These alarming racial disparities make clear the distressing relationship between food insecurity and the health conditions of low-income and minority populations, and how food insecurity has life-or-death consequences for whole groups of people.

Although there has been legislation to work against food deserts and their consequences, the current alternative food movement is not working for these communities. Alternative food refers to a "broad range of practices and programs designed to bring producers and consumers in close proximity and to educate the people of the value of local, sustainably grown, and seasonal food."[24] Examples of the movement include farmers' markets, community supported agriculture (CSAs), offering incentives for supermarkets to open up in underserved areas, and offering cooking/nutritional/hands-on educational classes to communities. The last decade or so has seen an expansion of scholarship on alternative food networks (AFNs), with more and more scholars focusing on the movement's limitations in addressing social justice issues, particularly food insecurity in poor and minority communities.[25] While

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19. "Diabetes Quick Facts," Centers for Disease Control and Prevention, accessed August 6, 2019, https://www.cdc.gov/diabetes/basics/quick-facts.html.

20. "Food Deserts*," http://www.foodispower.org/food-deserts/.

21. "Food Deserts*," http://www.foodispower.org/food-deserts/.

22. "The Truth About Fats: the Good, the Bad, and the In-Between," *Harvard Health Publishing*, February 2015, https://www.health.harvard.edu/staying-healthy/the-truth-about-fats-bad-and-good.

23. "Heart Disease and African Americans," U.S. Department of Health and Human Services: Office of Minority Health, accessed on 4/20/20, https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=4.

24. Alkon and Agyeman, 264.

25. Kato and McKinney, 215.

certainly well-intentioned and conceptually sound, these alternatives do not actually have much resonance with communities of color or low-income communities when they are put into practice. AFNs often undergird white desires or desires of the creator(s) more than the desires of the community they professedly serve. Guthman sees such a dynamic as having "traces of eugenic motivations" and displaying "markings of colonial projects," echoing earlier discussions of historic environmental racism.[26]

Farmers' markets are just one example of many alternative food projects. There are few farmers' markets located in communities of color, especially those that are primarily black. Those farmers' markets that do exist in predominantly black neighborhoods, moreover, tend to be very small.[27] When farmers decide where to open up their farmers' market, they are actually partaking in a type of supermarket redlining themselves. In other words, because farmers want to maximize their profits, they go to high-end areas with more palpable consumer demands. This renders the alternative food project of farmers' markets more attractive to whites than to others. It allows white people to define the rhetoric, spaces and broader projects of agrifood transformation, rather than those who are the most vulnerable to food insecurity.[28] Alternative food projects such as farmers' markets often focus on improving access to organic and fresh food for wealthier residents, while overlooking important and existing racial and social inequities within the food system.[29] To create a truly inclusive table where everybody has a seat, structural racial and social implications have to be taken into consideration when envisioning food justice.

Another type of alternative food operating under the guise of food justice are community supported agriculture programs or CSAs. Existing research suggests that POC simply do not participate in food institutions like farmers' markets and CSAs in relation to the general population, as they often disproportionately serve white and middle- to upper-middle income populations.[30] Despite alternative food activists' engagement toward local, community-owned and sustainable food production and consumption systems, and away from an agri-business model, the groups most at risk of food insecurity are basically absent within the alternative food movement.[31] This is due to the whiteness of these spaces and a common set of discourses circulating within these alternative food movements being predicated on whitened cultural histories.[32] Even within those CSAs that are arguably better-intentioned than others, many managers and vendors of the projects are racially "colorblind," holding preconceived ideas about farmers and community members.[33] Acting on colorblind racism, they do not want to target anyone specifically in the community because they wish to simply reach everyone who might be interested in eating locally, healthily, and organically. In this sense, managers and leaders

26. Julie Guthman, "Bringing Good Food to Others: Investigating the Subjects of Alternative Food Practice, *Cultural Geographies* 15, no. 4 (2008): 436.

27. Ibid, 436.

28. Alkon and Agyeman, 277

29. Anguelovski, 186.

30. Guthman, 440.

31. Anguelovski, 186.

32. Guthman, 433.

33. Alison Hope Alkon and Christie Grace McCullen, "Whiteness and Farmers Markets: Performances, Perpetuations...Contestations?" *Antipode* 43, no. 4 (2010): 433.

of CSAs see eating healthily, locally and sustainably as a lifestyle choice, one in which poor and minority people apparently do not or cannot adhere to.[34] Furthermore, CSAs require advance financial commitments and lump sum payments, which restrict the possibilities of participation for households with limited savings or inflexible food budgets.[35] If CSAs were to accept food stamps, some of the financial constraints may balance themselves out, but this becomes difficult because the extent to which CSAs can engage low-income households depends on the availability of public and private programmatic funding.[36] This is where CSAs and farmer markets differ; while farmers' markets are often located in wealthier/whiter neighborhoods, some farmers' markets do accept food stamps. Nonetheless, given these implications, it is apparent that alternative food projects such as CSAs often fail to address larger, more structural problems with food justice involving accessibility, affordability, and practicality.

Other ongoing national and local policies to improve diet in low-income and minority U.S. populations include increasing physical access to grocery stores and supermarkets in underserved neighborhoods, sometimes by offering these types of stores incentives to open in underserved areas. However, in a pilot study evaluating the impacts of opening a new supermarket in a Philadelphia community known as a food desert, the study found that the intervention moderately improved residents' perceptions of food accessibility, but did not lead to actual changes in reported fruit and vegetable intake or body mass index.[37] Thus, merely opening up a new grocery store in an underserved neighborhood is not a fully effective intervention. It may improve perceptions of food access in having the new grocery store be your secondary go-to for groceries, but this method does not necessarily translate into a behavioral change, and ultimately lacks resonance in low-income and minority neighborhoods.

The last alternative food intervention to be critiqued is the notion of offering nutritional or educational classes in schools and communities. While these programs are again well-intentioned, they often utilize discourses like "putting your hands in the soil" and "getting your hands dirty," which point not only to an agrarian past that is far more romanticized and realized by whites than others,[38] but also to triggering past images of slave labor among African-American farmers.[39] Similarly, other well-meaning educational narratives (such as "We need to show them how to...") among advocates who aim to encourage marginalized populations to eat more fresh/locally grown produce are predicated on the expectation of low human and cultural capital.[40] In

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34. Guthman, 436.

35. Kato and McKinney, 217.

36. Ibid, 217.

37. Steven Cummins, Ellen Flint, and Stephen A. Matthews, "New Neighborhood Grocery Store Increased Awareness of Food Access but did not Alter Dietary Habits or Obesity," *Health Affairs* 33, no. 2 (2014): 283.

38. Guthman, 435.

39. Anguelovski, 186.

40. Kato and McKinney, 217.

this analysis of food justice, human capital can be defined as one's capacity or knowledge of how to cook fresh produce and the health benefits of eating locally. Such narratives dominating the alternative food movement reflect activists' devaluing presumption that those who are not currently engaged in the movement lack this form of human capital.[41]

The alternative food network also speaks to the fact that all of the proposed strategies aforementioned are merely alternatives. In other words, it seems as if one dominant group of people (white and middle- to upper-class people) is determining the correct or normal way of life for another group of people (minority and low-income members). The insistence on alternatives in the alternative food movement may well reinforce a sense of exclusion and stigmatization in itself, as if residents of food deserts are not even deserving of what others take for granted.[42] To truly include *everyone* at the table of nutritional food, general food justice activism and the alternative food movement, in particular, need to take on a more holistic and structural approach.

It is clear that the alternative food network requires a more holistic, systematic approach to food justice activism to try and eliminate racial and class disparities in food accessibility and nutrition. Food justice activists cannot merely "invite others to the table," as the alternative food movement does. Instead, we must ask more critical questions: Whose table is it? Who created the table? Who is the table set for? Who puts food on the table? Why did somebody finally decide to send out an invitation to others? Is the invitation even genuine? And more. In knowing the difficulty in truly enhancing access to fresh food, the food justice movement contests the discourses and claims of alternative food projects. Guthman asserts that the focus of food justice activism should shift *away* from particular qualities of food and *towards* the injustices that undergird disparities in food access.[43] Stepping-stone-solutions toward this goal include the elimination of (supermarket) redlining, investing in urban renewal, expanding entitlement programs, and obtaining living wages.[44] Expanding on these concrete initiatives, managers and vendors of alternative food projects should also acknowledge how much they do not necessarily know about the entire realm of food politics and its social implications. In other words, everyone should turn away from universal assumptions about "good food" and food choices/lifestyles. Guthman argues that the leaders, staff and advocates of these alternative food organizations should recognize the discursive whiteness of their spaces and of the alternative food movement, and strive to alter the economic, social, and cultural conditions in which the alternatives operate.[45] By doing so, Alkon and Agyeman assert that this will open up the space to allow for others to define the spaces and projects (particularly those most affecting their communities), that will assist the transformation to a more just and ecological way of providing affordable and nutritional food for everyone at the table and beyond.[46]

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41. Ibid, 217.
42. Guthman, 441.
43. Ibid, 443.
44. Ibid, 443.
45. Ibid, 443.
46. Alkon and Agyeman, 277.

Climate Change and Women's Security in Mozambique

Sophie Luijten | May 2020

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Climate change is a universal crisis. However, its devastation is felt first and most severely by women in poor countries. It is crucial to recognize and examine these gender disparities closely in order to understand how to protect vulnerable women and create a more effective, inclusive, and just climate policy framework.

Therefore, I pursue the question: How does climate change impact women differently than men? To answer this question, I examine the effects of climate change on the security of women, with a case study of Mozambique and the gendered effects of the 2016 El Niño-related drought.

Climate change is an inherently feminist issue. Existing literature has consistently found that climate change disproportionately affects women's economic and physical security all over the world. This phenomenon can generally be attributed to women's limited access to resources and exclusion from leadership roles, which stem from their inferior social status. The gendered impact of climate change is amplified in cases of extreme poverty, especially in developing countries with a low level of socioeconomic development. In fact, recent scholars have adopted an ecofeminist lens, asserting that "climate change is part of a destructive patriarchal politico-economic structure."[1] In the ecofeminist lens, peace, equality, and climate are inseparable issues requiring integrated solutions.[2]

Researchers emphasize two fundamental explanatory factors for why climate change disproportionately affects women's security in Global South nations like Mozambique. First, poor communities have the hardest time recovering from natural disasters induced by climate change, since a lack of financial resources causes a slower and tougher recuperation period. Considering about seventy percent of those living below the poverty line are women, it makes sense that women are more vulnerable to the threat of natural disasters than men. Secondly, gender norms place women at a disadvantage in several ways. Due to socially constructed ideas about women's roles and responsibilities, women across the world carry a greater workload in the household and have less access to education and resources. Consequently, they "are frequently unable to swim [in case of flooding] or leave the house unattended, and are less likely to migrate to look for shelter and work when a disaster hits."[3] Furthermore, women are not equally included in most decision-making processes, a pattern which unfortunately extends to climate change discourse.[4] Women also lack or have limited access to essential resources such as land rights, financial resources, training and technology, and political decision-making

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1. Sara Davies, Jacqui True, and Annica Kronsell, "WPS and Climate Change," in *The Oxford Handbook of Women, Peace and Security*, (New York: Oxford University Press, 2019).

2. Ibid.

3. OxfamAmerica,"Fact Sheet: Climate Change & Women," *OxfamAmerica*, December 15, 2008, oxfamamerica.org/static/media/files/climatechangewomen-factsheet.pdf.

4. Ibid.

spheres—all of which keep them from being able to engage in climate change adaptation strategizing.[5] Gender disparities within climate change effects are aggravated in developing countries, particularly in situations of "violent conflict, political instability, and economic strife."[6]

Climate change's disproportionate threat to women is especially evident in Mozambique, which lacks the institutional and financial resources to react to climate change and is struck by natural disasters more than any other Southern African country.[7] Mozambique's location and geography make it especially vulnerable to climate change, as over 60% of the population resides in low-lying coastal areas and have endured coastal storm surge floods, tropical cyclones, and droughts of increasing frequency and severity.[8] Poverty and weak institutional development hinder Mozambique's resilience against these natural disasters.[9]

During the severe El Niño drought of 2016, Mozambique encountered a wide array of challenges that were primarily felt by women. A study conducted by CARE International in Mozambique found that 91.9% of female-headed households lacked sufficient food during the drought, resulting in 80% of households having only two meals a day. Women spent over six hours per day finding and transporting water, compared to up to two hours before the onset of the drought. Young girls were pulled out of school to assist their mothers in collecting water, foraging for bush foods, and sustaining the household. Engaging in water collection activities at natural springs shared with animals places girls at a greater risk of confrontations with wild animals, as well as sexual and gender-based violence. Interviewed Mozambican women report older men preying on girls aged eleven to thirteen during their water collection, luring them away to rape them. Young girls who were consequently impregnated faced social and cultural stigma. Because of these rapes, the median age for first sexual intercourse for girls lowered from sixteen years in 2003 to eleven or twelve years old by 2016.[10] It was also not

5.   International Union for Conservation of Nature, "Gender and Climate Change," *IUCN*, December 5, 2018, www.iucn.org/resources/issues-briefs/gender-and-climate-change.

6.   Mayesha Alam, Rukmani Bhatia, and Briana Mawby, "Women and Climate Change: Impact and Agency in Human Rights, Security, and Economic Development." *Georgetown Institute for Women, Peace and Security,* 2015, giwps.georgetown.edu/resource/women-and-climate-change.

7.   Saquina Mucavele, "Gender and Climate Change in Mozambique," MUGEDE, *Water and Climate Change in Africa: Challenges and Community Initiatives in Durban, Maputo and Nairobi,* Routledge, 2013, yorkspace.library.yorku.ca/xmlui/bitstream/handle/10315/27508/CHAPTER 8.pdf?sequence=8.

8.   USAID, "Climate Risk Profile: Mozambique." *Climatelinks,* USAID, July 1, 2018,www.climatelinks.org/resources/climate-risk-profile-mozambique.

9.   Government of the Netherlands, "Climate Change Profile: Mozambique - Mozambique," *ReliefWeb,* Government of the Netherlands, February 5, 2019, reliefweb.int/report/mozambique/climate-change-profile-mozambique.

10.   "Hope Dries up? Women and Girls Coping with Drought and Climate Change in Mozambique - Mozambique." ReliefWeb, OCHA, November 15, 2016, reliefweb.int/report/mozambique/hope-dries-women-and-girls-coping-drought-and-climate-change-mozambique.

uncommon for women and girls to resort to desperate measures in the informal labor sector, such as survival sex, for food.[11]

> " If policy frameworks are to effectively address the greater struggles of women in the face of climate change, women must emerge at the forefront of climate change action plan development and civil society consultations. "

The food scarcity and poverty brought on by the drought's environmental degradation also increased child marriage rates as families sold their daughters into marriage to raise income through dowry. Child marriage puts girls at a greater risk for sexual and physical abuse, malnutrition, and maternal neonatal death. Mozambican women also experienced reduced menstrual hygiene as a result of the drought, as the absorbent plant traditionally used for menstrual pads became scarce. Without money to purchase pads, women were forced to use harsher plant material or even packed sand to absorb their menstrual blood. In an effort to generate additional income, some rural women also had to resort to brewing beer for sale, which has increased alcohol use and domestic violence against women by drunken husbands. Families also give their children brewed beer to reduce hunger, which in turn has negative consequences for children's developmental health. Sixty-seven year old Nera Matwasa "would prefer not to produce this alcohol, as it causes a lot of problems for other women who are beaten by their drunken spouses," but "the duration and harshness of this drought has meant she has no alternative income source."[12] In sum, the Mozambique drought produced many gender-specific effects: reduced access to water, reduced education, reduced menstrual hygiene, increased gender-based violence and teen pregnancies, increased child marriage, and increased use of alcohol.[13]

In the aforementioned ways, men play a significant role in exacerbating the threat of climate change to women's security in Mozambique. They subject women to gender-based violence and sexual abuse, unwanted pregnancies, child marriage, and domestic abuse. Norms relating to masculinity and femininity inform the roles that men and women take in adapting to climate change, with women bearing a greater burden of sustaining the household and collecting food and water. These gendered responsibilities expose women to safety risks during their water collection activities and reduce their educational outcomes and menstrual hygiene.

These same gender norms, however, could help build peaceful solutions by engaging women in water resource management, since women are in charge of water collection. Doing so would support women to develop mechanisms which sustain both the environment and their own livelihoods. Women's involvement in planting drought-tolerant crops out of a vested interest in their menstrual hygiene, for example, would promote

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11.   Ibid.

12.   Ibid.

13.   Ibid.

their autonomy and participation in climate change adaptation.[14] Again drawing on gendered norms for solutions, women's political participation is associated with an increased consideration of citizen's needs and therefore greater cooperation along party and ethnic lines. Moreover, women's occupation of local leadership positions is directly correlated with improved outcomes of climate- and environment-related projects and policies.[15] This can be accomplished by incorporating gender mainstreaming practices into policy assessment. Gender mainstreaming integrates a gendered lens into the policymaking process, equally considering and addressing the needs and experiences of women and men in all planned actions, specifically at the legislative and policy levels.[16] Therefore, the practice of gender mainstreaming in the climate policy framework promotes equality and efficacy prospects.[17]

The 2016 Mozambican drought threatened women's security by exposing them to increased gender-based violence, child marriage, domestic abuse, and reduced educational outcomes and menstrual hygiene. Men were often the agents perpetrating women's insecurity in these instances. Women must be fully involved in decision-making processes in climate change adaptation to increase equality and effectiveness. If policy frameworks are to effectively address the greater struggles of women in the face of climate change, women must emerge at the forefront of climate change action plan development and civil society consultations.

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14.   Ibid.

15.   "Introduction to Gender and Climate Change." *UNFCCC.* Accessed April 20, 2020, https://unfccc.int/gender.

16.   "United Nations, "UN Economic and Social Council Resolution 1997/2: Agreed Conclusions," *Refworld*, accessed April 22, 2020, www.refworld.org/docid/4652c9fc2.html.

17.   "Introduction to Gender and Climate Change."

Beyond the State: A Future for Grassroots Climate and Environmental Disaster Response

Alaina Bottens | May 2020

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On September 20th, 2017, Hurricane Maria transitioned from water to earth just south of Puerto Rico's Yabucoa Harbor, only two miles per hour below the threshold of a Category 5 Hurricane.[1]

Almost thirty hours later, survivors faced the new reality of an almost entirely devastated island that only two weeks prior had felt the impact of another Category 5 storm, Hurricane Irma. Damages included the almost complete loss of energy and communication infrastructure across the island, including: severe damage to housing, hospitals, and other facilities, a lack of food, clean water and medical supplies, and the extensive obstruction of roads by trees, mudslides and other debris dislodged by the storm.[2] Across the island, residents affected by Maria waited, "in limbo," for promised

1. Richard J. Pasch, Andrew B. Penny, Robbie Berg, "National Hurricane Center Tropical Cyclone Report: Hurricane Maria (AL152017)," *National Hurricane Center*, February 14, 2019, nhc.noaa.gov/data/tcr/AL152017_Maria.pdf.

2. Robinson Meyer, "What's Happening with the Relief Effort in Puerto Rico?" *The Atlantic*, October 4, 2017, https://www.theatlantic.com/science/archive/2017/10/what-happened-in-puerto-rico-a-timeline-of-hurricane-maria/541956/. Olga Rodríguez de Arzola,"Emergency Preparedness and Hurricane Maria: The Experience of a Regional Academic Medical Center in Southwest Puerto Rico" *Journal of Graduate Medical Education*: 10, no. 4 (2018): 477-480, 10.4300/JGME-D-18-00547.1; Yxta Maya Murray, "'FEMA Has Been a Nightmare:' Epistemic Injustice in Puerto Rico," Willamette Law Review 55, no. 2 (2019), 352..

and expected assistance from the U.S. Federal government, only to produce "victim uncertainty," or "uncertainty paralysis," when that aid did not arrive or reach those affected by the storm.[3] Later interviews reveal the horrific and compounding failures of FEMA's approach to disaster response in Puerto Rico. For instance, FEMA deployed responders that did not speak Spanish.[4] The agency relied on digital aid applications despite the loss of Puerto Rico's power grid and internet services.[5] It made no provision for the fact that economically disadvantaged and elderly Puerto Ricans could not access computers or smart devices. The absence of FEMA workers in rural and mountainous regions and a lack of recognition for especially at-risk populations following the storm added to FEMA's failures.[6] The U.S. Federal Government's response through FEMA and other avenues would turn out to be so critically inadequate that it would trigger criticism from UN Human Rights officials and would ultimately result in the designation of Hurricane Maria as one of the deadliest natural disasters in United States history.[7] In the end, it was the victims themselves "who actually mobilized to deliver food and water," and initiated the rebuilding of their communities often with no government support at all. [8]

While the inadequacy of the Federal government's response to Hurricane Maria and the resulting harm brought to Puerto Rico remains unprecedented in its scale and impact, Maria represents only one in a long line of natural disasters endured by already marginalized communities.[9] Moreover, state-directed relief efforts, or the lack thereof, prior to and following Hurricane Maria, offer a critical glimpse into how reliance on the state for relief during natural disasters often offers a false choice for already marginalized communities. Extensive criticism of state responses to natural disasters in relation to communities of color, economically disadvantaged populations, those living under U.S. colonial and settler colonial control,

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3. Murray, "FEMA Has Been a Nightmare," 379. The terms, "victim uncertainty" and "uncertainty paralysis" originate in Dr. Yxta Maya Murray's use of the concept to describe the ways in which many Puerto Ricans struggled to act in their own self-interest of survival due to the uncertainty surrounding whether or not help would arrive from the Puerto Rican or US Federal Government (Murray, "FEMA Has Been a Nightmare," 378-379).

4. According to data from the 2010 Census, 84.3% ME +/-0.4 of Puerto Ricans reported that they "Speak English less than 'very well.'" These statistics are critical to understanding why deploying first responders in a natural disaster who cannot speak Spanish, a language spoken by a majority of the population, is particularly harmful and ineffective in assisting those affected by Hurricane Maria (U.S. Census Bureau, "Language Spoken at Home," 2010, 3, https://www.census.gov/prod/2002pubs/c2kprof00-pr.pdf).

5. Murray, "FEMA Has Been a Nightmare," 326, 348, 349.

6. Ibid, 321.

7. Following mounting criticism for the lack of planned or ongoing relief efforts by both the US and Puerto Rican Governments, UN Human Rights Special Rapporteur on the Right to Housing, Leilani Farha, alongside additional UN Human Rights Officials, pointed to the UN's inability to ignore "the dissimilar urgency and priority given to the emergency response in Puerto Rico, compared to the US states affected by hurricanes in recent months" ("UN experts sound alarm on mounting rights concerns in Puerto Rico in wake of Hurricane Maria," *UN News*, October 30, 2017, https://news.un.org/en/story/2017/10/569602-un-experts-sound-alarm-mounting-rights-concerns-puerto-rico-wake-hurricane#.WgnScItSzIW).

8. Murray, "FEMA Has Been a Nightmare," 361.

people with disabilities, the elderly, and others among other marginalized communities date back at least to Hurricane Katrina and have remained relevant to the impact of many subsequent disasters.[10] If testimony from victims of recent disasters provide any indication, a continued reliance on state-directed responses to natural disasters will only continue to lead marginalized and especially at-risk communities down a path similar to that of Puerto Rico following Hurricane Maria.

> " We must look beyond state-directed natural disaster relief efforts and turn instead towards responses coordinated directly by affected communities. "

In order to limit the harm faced by marginalized and vulnerable communities in future natural disasters, I argue that we must look beyond state-directed natural disaster relief efforts and turn instead towards responses coordinated directly by affected communities. Both recent and long-standing criticisms of the US legal system have provided compelling evidence for the numerous ways in which it is extremely difficult, if not impossible, to progress towards justice and equity through the very state institutions that continually produce and reproduce harm and oppression. Previous criticisms have deconstructed the perceived "successes" of LGBT rights, civil rights, and prison or police reform movements. However, few critiques have expanded upon the ways in which environmental justice and environmental disaster response movements appeal to the same state and legal institutions that often fail to recognize, address, or deliver on promises to end environmental discrimination. Furthermore, while many environmental justice movements have recognized the importance and resourcefulness of grassroots movement building, collective action, and local knowledge, many proposed solutions have failed to specifically advocate for planned, widespread, and sustained community support networks when facing environmental injustices both in everyday life and extreme events, such as sudden climate or environmental disasters.

Through a critique of state, legal, and nonprofit efforts to provide relief to marginalized communities following natural disasters, this essay seeks to develop a novel argument for critical trans, disability-justice, and abolitionist-informed disaster relief "care networks" as an alternative to relying on the very institutions that continuously produce

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9. In my use of "marginalized communities" and later, "vulnerable populations," in the context of natural disasters throughout this thesis, I refer to the various populations who not only face marginalization by the state or other actors in everyday life, but also those who face additional barriers to evading harm or receiving assistance due to inadequate evacuation planning and state-determined roadblocks that deem certain individuals ineligible to receive necessary state-assistance in natural disasters. These populations include communities of color, low income communities, people with disabilities and the elderly, and populations living under colonial control or within a settler-colonial state (Marsha Saxton and Alex Ghenis, "We Must Consider How Climate Change Will Affect People With Disabilities," *Truthout*, May 27, 2018, truthout.org/articles/we-must-consider-how-climate-change-will-affect-people-with-disabilities/; Alice Wong, "In California wildfires, disabled people may be left behind," *Curbed: San Francisco*, November 13, 2018, sf.curbed.com/2018/11/13/18087964/califorina-wildfires-disabled-people-eldery-evacuation-disabilities; T. Mayheart Dardar, "Tales of Wind and Water: Houma Indians and Hurricanes," *American Indian Culture and Research Journal* 32, no.2 (2008): 27-34). At times, individuals within these groups may be left behind both knowingly and "unknowingly, " even sacrificially in some instances, during moments of escape or rescue.

10. Murray, "FEMA Has Been a Nightmare," 335.

environmental, climate, and state violence through inaction in natural disasters.[11] By analyzing an example of a "care web" network that developed under conditions of significant need, specifically during a natural disaster where traditional, pre-established systems of state or nonprofit support demonstrated their significant limitations or failed entirely, we can critically observe the actions of individuals whose only alternative is their own community. This subject not only advances scholarship of environmental justice and community care networks "beyond the state," both within and outside of environmental and climate disasters. It also offers readers a critical vision of what could be in terms of equitable and just environmental and climate disaster organizing outside of state institutions, as well as in cases of slow violence and the everyday occurrence of small-scale, or local environmental injustices.[12]

At the Limits of Justice in Environmental Justice Movements

Within the environmental justice movement, scholars and organizers alike have spoken to the necessity of local, grassroots-directed movements that build solidarity among affected communities. There remains a notable absence in this discourse, however, where few scholars have proposed grassroots solutions or movement building in relation to environmental, climate, and natural disaster injustices that operate *entirely outside* of state control, institutions, and legal systems. This is, of course, not to suggest that affected communities should engage in various practices or approaches deemed "illegal" in order to achieve environmental or climate justice, but rather, that these movements or solutions question and distance themselves from state and legal systems which they repeatedly ask to "deliver justice, to police [themselves], and to regulate industries," despite a long and well-known history of the limited enforcement of civil rights and environmental legislation by the state.[13] Moreover, these movements might consider operating outside of state due to the reality that these same systems, as put succinctly by David Pellow, were "never intended to provide justice for marginalized peoples and non-human natures."[14] Through this logic, movement building that occurs in response to environmental, climate, and natural disaster injustices may benefit significantly from the recognition that environmental racism and injustice remains yet another manifestation of state violence, and should be treated as such.[15]

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11. In the use of "care networks," "care webs," or "care collectives," I reference disability justice scholar and activist Leah Lakshmi Piepzna-Samarasinha's theories and reimaginations of care, which I discuss extensively later in this analysis. (Leah Lakshmi Piepzna-Samarasinha, *Care Work* (Vancouver, British Columbia: Arsenal Pulp Press, 2018), 44.)

12. David Naguib Pellow, *What Is Critical Environmental Justice?* (Cambridge, UK: Polity Press, 2018), 59. By invoking "slow violence," I broadly reference Rob Nixon's analytic in *Slow Violence and the Environmentalism of the Poor*, (Cambridge, MA: Harvard University Press, 2011).

13. Pellow, What Is *Critical Environmental Justice?*, 23.

14. Ibid.

15. David N. Pellow, "Toward a Critical Environmental Justice Studies: Black Lives Matter as an Environmental Justice Challenge," *Du Bois Review: Social Science Research on Race* 13, no. 2 (2016): 230, https://doi.org/10.1017/S1742058X1600014X.

In his book, *What Is Critical Environmental Justice?* David Pellow briefly proposes this exact intervention. By thinking, "beyond the state" Pellow argues that environmental justice organizers, scholars, and movements alike may more easily achieve their objectives with less state-determined limitations or roadblocks.[16] While Pellow's groundbreaking scholarship raises provocative questions related to ideological and physical organizing *beyond the state* in a way that seeks to "deepen direct democracy," he simultaneously emphasizes his scholarly and ideological distance, however slight, from abolitionist or anarchist frameworks in environmental justice, civil rights, or anti-police movements.[17] For instance, at one point Pellow reduces Black Lives Matter activists' thinking "beyond policing" to little more than "a good start."[18] Moreover, in his brief discussion of natural disaster organizing efforts by the Common Ground Collective during Hurricane Katrina, a group that explicitly identified itself as anarchist, Pellow both uplifts their successes while maintaining a safe distance from condoning entirely anarchist or abolitionist approaches to environmental disaster, environmental justice, and anti-police organizing efforts.[19]

While I agree with Pellow that, under certain conditions, organizing in concert with the state may be an effective tool to obtain protections or relief for some individuals affected by the discriminatory practices of the state or other actors, I also seek to address the extensive limitations of organizing alongside the state in the context of environmental justice-informed natural disaster relief efforts. Furthermore, I seek to distinguish my argument as explicitly and unapologetically in alignment with environmental disaster organizing efforts that exist beyond the state or even *in spite* of the state's inaction. Below I analyze how marginalized communities are disadvantaged and harmed by state and nonprofit responses to natural disasters. This is followed by a proposal for critical environmental justice, disability justice, and abolitionist-informed grassroots natural disaster response movements that provide direct, tangible relief to those affected by natural disasters. I will conclude with a paramount example of the grassroots, anti-state environmental disaster relief group, *Occupy Sandy*, and the ways in which *Occupy Sandy* may further advance their objectives through the introduction of these theories as they shape environmental and climate disaster care networks.

It is essential to understand how we have collectively arrived at this point of contention. Specifically, how and why have state-sponsored, nonprofit, and charity-centered disaster recovery efforts taken center stage following the strike of a natural disaster? And most crucially, why have these approaches been limited in their success or failed entirely in assisting those most marginalized by environmental and climate disasters? Answering these questions, and thus critiquing status-quo approaches to climate disaster recovery, will allow us to move towards a novel solution to natural disaster relief efforts that not only operate successfully *beyond the state*, but center those most marginalized by these disasters in a way that provides widespread, concrete, and sustained relief to affected communities.

The critical knowledge needed to answer the above questions lies in developing an understanding of the Non-Profit Industrial Complex (NPIC) in the context of

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16. Pellow, What Is Critical Environmental Justice?, 59.

17. Ibid, 24.

18. Ibid, 23.

19. Ibid, 24-25.

environmental and climate disasters. As defined by Andrea Smith, the Non-Profit Industrial Complex (NPIC) reflects a system of relationships between the state and owning class that seeks to:

> Monitor and control social justice movements; divert public monies into private hands through foundations; manage and control dissent [...]; reject activist energies into career-based modes of organizing instead of mass-based organizing capable of transforming society; allow corporations to mask their exploitative and colonial work practices through 'philanthropic' work; [and] encourage social movements to model themselves after capitalist structures rather than challenge them.[20]

Scholars of the NPIC, including Ruth Wilson Gilmore, further define a specific section of the NPIC, deemed the "Shadow State," for its expanding role as a provider of social services, which are typically offered, but are now distantly monitored by, the state.[21] Through both the NPIC and "Shadow State," nonprofits and charities have become major actors in providing various social services to those affected by natural disasters, even resulting in their direct inclusion in Federal natural disaster relief law. Under the Stafford Act of 1988, for instance, which directs Presidential actions in natural disasters, there exists legal code directing the President to select an officer who will "coordinate the administration of relief" with organizations including "the American Red Cross, the Salvation Army, the Mennonite Disaster Service and other relief or disaster assistance organizations" that agree to this partnership.[22] Through the law's direct suggestion that the President and Federal officials coordinate relief with the aforementioned dominant non-profit relief groups, as well as the more vague suggestion to include "other disaster relief organizations," it becomes increasingly clear that these explicitly named groups, as well as other major nonprofits, have become a significant source of support for the state in the context of natural disaster relief.

To offer a critical representation of the restraints these relationships present, I will briefly analyze the short-lived relationship between the *American Red Cross* and the now iconic grassroots disaster relief organization known as *Occupy Sandy*, which emerged in the immediate aftermath of Hurricane Sandy, a Category 1 storm with particularly severe effects in New York for its exceptionally high storm surge. Following the *Red Cross'* initial struggle to provide relief to affected communities, which at one point resulted in the

20. Andrea Smith, introduction to *The Revolution Will Not Be Funded*, ed. INCITE! (Durham, NC: Duke University Press, 2017), 8.

21. Ruth Wilson Gilmore, "In the Shadow of the Shadow State," in *The Revolution Will Not Be Funded*, ed. INCITE! (Durham, NC: Duke University Press, 2017), 45.

22. Stafford Act, 42 U.S.C. 5143 (b) (3) (1988).

23. Justin Elliott, Jesse Eisinger, and Laura Sullivan, "The Red Cross' Secret Disaster," *ProPublica*, October 29, 2014, https://www.propublica.org/article/the-red-cross-secret-disaster.

24. Justin Elliott and Jesse Eisinger, "How Fear of Occupy Wall Street Undermined the Red Cross' Sandy Relief Effort," *ProPublica*, December 11, 2014, www.propublica.org/article/how-fear-of-occupy-wall-street-undermined-the-red-cross-sandy-relief-effort.

25. Ibid.

throwing away of "tens of thousands of meals because [the Red Cross] couldn't find the people who needed them,"[23] the *Red Cross* increasingly coordinated their efforts with *Occupy Sandy*, at times relying heavily on them for their access to "minute-by-minute information,'" among other resources.[24] This relationship proceeded temporarily, at one point even symbiotically, where one *Occupy Sandy* organizer recounted the Red Cross' ability to provide hot meals for *Occupy Sandy* to distribute.[25] However, concerns quickly arose about the partnership. According to later testimony from multiple *Red Cross* responders, they received direction from an official in Washington, "not to interact with *Occupy*," for the unpalatable "political and donor ramifications of associating" with them, most specifically for *Occupy Sandy's* prior connection to the *Occupy Wall Street* movement.[26] Documents also show *Red Cross* responders' attempts to covertly work alongside *Occupy*, including the maintenance of a private spreadsheet containing the contact information of *Occupy* organizers—a document that remained hidden from senior *Red Cross* officials—and a request that *Occupy* send volunteers with the stipulation that "they couldn't wear any *Occupy* stuff."[27] In an attempt to maintain a veil of apoliticism for the comfort of their donors, the *Red Cross* had to disaffiliate with a successful grassroots disaster relief group, ultimately preventing them from fulfilling their original mission to: "prevent and alleviate human suffering in the face of emergencies by mobilizing the power of volunteers and the generosity of donors."[28]

While structural critiques of "Industrial Complex" systems, such as the NPIC, remain critical to understanding the processes that shape our lives and determine our potentialities both in and outside the context of natural disasters, these critiques do not exist without nuance.[29] As Soniya Munshi and Craig Willse discern, the NPIC contains a significant range of nonprofits, from "national and transnational organizations with multi-million dollar budgets," to "small, grassroots-funded community-based organizations," each of which exist with "a wide range of kinds of work, political commitments, and resources."[30] Thus, in order to mobilize critiques of the NPIC successfully, it is critical to understand that we cannot "collapse these differences even while recognizing a set of shared structural forces and logics," especially as many "nonprofits themselves are vulnerable to these structural forces."[31] Moreover, we must not conflate the oppressive, structural limitations of organizations in the NPIC with the individuals who operate within these systems. As Munshi and Willse further articulate, the individuals who work in the NPIC often negotiate their positionalities within this system, even altering priorities and agendas of various groups in ways that may, "resist the assumptions of the NPIC and subvert or manipulate the non-profits form to serve radical commitments."[32] Despite these nuances, the overarching structural limitations of the NPIC continue to significantly influence the billion or million-dollar budgeted, wealthy donor-funded, transnational natural disaster relief groups recognized and deployed by the state during these disasters. Accordingly, these organizations in particular warrant our collective recognition and criticism as they remain

26. Ibid.

27. Ibid.

28. American Red Cross, "Mission and Values," *The American Red Cross*, accessed April 20, 2020, www.redcross.org/about-us/who-we-are/mission-and-values.html.

29. Soniya Munshi and Craig Willse, Foreword to The Revolution Will Not Be Funded, ed. INCITE! (Durham, NC: Duke University Press, 2017), xvii.

30. Ibid.

31. Ibid.

32. Ibid, xix.

complicit in the oppressive structures of the NPIC.

In addition to understanding the limitations of the state and the non-profit organizations it collaborates with through the aforementioned partnerships, it is critical to examine how the NPIC further limits social justice movements through the suppression of transformative politics. Rather than directly repressing dissent through imprisonment as the Prison Industrial Complex (PIC) does, the NPIC "manages and controls dissent by incorporating it into the state apparatus."[33] Moreover, the NPIC often relies on the satisfaction of its donors through concrete and quantifiable deliverables, often resulting in the encouragement of nonprofits to "operate on short-term goals rather than being supported in building long-term sustainable structures to achieve transformative demands."[34] As tangentially critiqued by Sonia E. Alvarez in the context of Latin American Feminist Non-Governmental Organizations, or NGOs, the state often attempts to "subcontract" Feminist groups to direct or inform state-sponsored women's programs, whom the state regards as "experts who can evaluate gender politics and programs *rather than* [...] movement organizations."[35] Ultimately, Alvarez argues, "NGOs' growing contractual relationship with the State may in fact compromise their effectiveness in advocating for feminist reforms."[36] While Alvarez' work exists in the context of feminist non-profit groups in Latin America, her theorizing and broader frameworks can be applied to the limitations of state-coordinated environmental justice and natural disaster relief efforts. Even as well-intentioned, grassroots-centered and environmental justice-informed natural disaster relief efforts begin to operate alongside the state, their work often transforms into working *for* the state and within boundaries of state palatability and interest, ultimately limiting their ability to build widespread movements that achieve transformative change. Like Audre Lorde's theorizing of the ways in which women of color are called upon to educate white women and men about their needs and experiences, the state calls upon environmental justice, climate justice, and natural disaster relief organizations and movements to educate the state as to the needs and experiences of marginalized communities that face long standing, state-coordinated symptoms of environmental racism and inequality. Thus, following Lorde's theory, relationships between environmental and climate justice groups and the state, particularly in context of natural disasters, represent yet another manifestation of the "old and primary tool of all oppressors to keep the oppressed occupied with the Master's concerns."[37]

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33. Andrea Smith, introduction to *The Revolution Will Not Be Funded*, ed. INCITE! (Durham, NC: Duke University Press, 2017), 8-9.

34. Dean Spade, *Normal Life: Administrative Violence*, Critical Trans Politics, and the Limits of the Law (Durham, NC: Duke University Press, 2015), 99.

35. Sonia E. Alvarez, "Advocating Feminism: The Latin American Feminist NGO 'Boom,'" *International Feminist Journal of Politics* 1, no. 2 (1999): 192, https://doi.org/10.1080/146167499359880.

36. Ibid.

37. Audre Lorde, "Master's Tools Will Never Dismantle the Master's House," in *Sister Outsider: Essays and Speeches*, (Freedom, CA: The Crossing Press, 1984), 113.

A Case for Critical Trans Studies, Disability Justice, Abolitionist-Informed Care Collectives in Disaster Recovery

The ways in which state-directed relief and community recovery efforts are painted as dichotomous, either/or responses to natural disasters not only prolongs the harm faced by discounted and marginalized communities. It results in death. Accordingly, I argue that as we look beyond state and nonprofit-directed natural disaster relief efforts, we must turn towards organizing strategies informed by critical trans studies, disability justice, environmental justice, and abolitionist movements in order to form pre-established, equitable, and unceasing disaster relief care networks that center those most marginalized by both the state and its responses to natural disasters.

Critical trans theorist, legal scholar, and activist, Dean Spade, offers a compelling critique of social justice movements that center legal reforms, and therefore state-based approaches, in their organizing in order to achieve "equality" and "justice" through the law. Most specifically, Spade focuses on the ways in which many lesbian and gay rights-movements measure their "success" through the legal reforms and "protections" they obtain, while simultaneously excluding trans communities and ignoring the ways in which trans people remain extremely marginalized by the state and its legal systems.[38] Moreover, Spade addresses the ways in which legal "protections" obtained through the state, for example, anti-discrimination laws, often only change "what the law says about what a system is doing, but not its actual impact," only to benefit "a narrow swath of affected people," in the end.[39]   While Spade is primarily concerned with the ways in which trans experiences illuminate the failures of contemporary equality-based law reform efforts, we can apply his broader theories and frameworks of analysis to rights-based and state-reliant approaches to environmental justice and climate disaster relief movements. Through Spade's analysis, we can understand legal avenues and state-based approaches to environmental and climate disaster organizing as often leaving those most marginalized by the state, regardless of their inclusion in state-granted legal protections, at-risk of violent, even targeted state (in)action in natural disasters.

> " The ways in which state-directed relief and community recovery efforts are painted as dichotomous, either/or responses to natural disasters not only prolongs the harm faced by discounted and marginalized communities, it results in excess death. "

Therefore, rather than turning to legal reforms and rights-based approaches as an end goal of social justice movements, which often "merely tinker with systems to make them look more inclusive while leaving their most violent operations intact," Spade argues that we must instead "strategize about how to use legal reform tools as part of a broader strategy...while we build alternative methods to meeting human needs and organizing political participation."[40]   Through the revolutionary critical trans scholarship offered by

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38. Spade, *Normal Life*, 49.

39.   Ibid, 48-49.

40. Ibid, 49.

Dean Spade, as well as by understanding the ways in which trans experiences illustrate the limits of the law, rights-based approaches, and state-based approaches to social and environmental justice organizing, we can turn confidently towards alternative methods of organizing that actually meet the direct needs of those marginalized by state apparatuses.

While operating entirely outside of state institutions and influence remains an undervalued and at times unacknowledged development in environmental justice scholarship and natural disaster relief efforts, notions of ethical care, mutual support, and the creation of long-term care networks have existed among people with disabilities for generations. Prior to exploring the promise disability justice and disability studies hold for equitable climate disaster organizing beyond the state, we must first address the importance of elevating the voices of people with disabilities in our reimagined responses to natural disaster relief efforts. Centering disability theorists and activists in our amended responses to natural disasters beyond state institutions remains critical not only for people with disabilities' knowledge and expertise in longstanding, reimagined care networks and care ethics, often developed through both lived experiences and groundbreaking scholarship, but also for the ways in which natural disasters represent a paramount disability and environmental justice issue. For instance, during Hurricane Harvey and Hurricane Katrina, photos released after the storms' passing reflect a clear lack of emergency and evacuation planning for the residents of assisted living facilities, including a horrifying photo of elderly and disabled individuals seated inside a nursing home with Hurricane Harvey's flood water reaching their chests, and tragic photos of individuals in wheelchairs that were abandoned outside homes or government shelters after Hurricane Katrina.[41] Most recently, in Hurricane Maria, numerous reports arose of the lack of urgency around care in nursing home facilities and for elderly or disabled residents that were either abandoned by administrators or unable to operate due to a lack of fuel to power generators. In these disastrous scenarios, the medical equipment and refrigerators needed to keep residents' insulin and other critical medications at the correct temperature failed, thus placing residents' lives at an even greater risk after the storm's passing.[42] To be clear, adequate planning for people with disabilities and the elderly in natural disasters remains a critically unaddressed issue. Individuals with disabilities and the elderly experience disproportionate vulnerabilities, harm, death,

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41. The described image and related information can be found in the following source: Kara Milstein and Sophia Rosenbaum, "'Need Help ASAP.' The Story Behind the Photo of Nursing Home Residents Trapped in Hurricane Flood Water," *Time*, August 28, 2017, www.time.com/4917743/la-vita-bella-nursing-home-dickinson-texas-photo/. Rather than citing the images reflecting these tragic losses in Hurricane Katrina, which do not do justice to the victims and those who suffered due to the disaster itself, the ableist lack of planning, and overall government inadequacies, I will instead cite a government document from the National Council on Disability reporting the extensive impacts and harm done unto people with disabilities and the elderly in Hurricane Katrina, specifically, Lex Frieden, "The Impact of Hurricanes Katrina and Rita on People with Disabilities: A Look Back and Remaining Challenges," *National Council on Disability*, August 3, 2006, https://ncd.gov/publications/2006/Aug072006.

42. Molly Hennessy-Fiske, "In one Puerto Rican nursing home, a struggle to get power and keep patients alive," *Los Angeles Times*, October 1, 2017, www.latimes.com/nation/la-na-puerto-rico-healthcare-20170930-story.html; Murray, "FEMA has been a nightmare," 350.

and injustice in natural disasters due to ableist planning in response and rescue, as well as ableist notions of value—both of which deserve extensive recognition, analysis, and criticism moving forward.[43]

 In *Care Work*, Leah Lakshmi Piepzna-Samarasinha examines the notion of "care webs," "care collectives," and disability-oriented mutual support networks as a reimagined and "profoundly political" response to caregiving.[44] Through an illustration of disability scholar and activist Loree Erickson's own rapidly constructed care collectives, which began as a "survival strategy" when the state refused to adequately fund her access to paid care-giving, Piepzna-Samarasinha explores the radical potential of care webs, writing that, in these networks, Erickson's "access is posited as something she both needs and deserves, and as a chance to build community, hang out with Loree," organize politically, "and have fun—not as a chore."[45] Piepzna-Samarasinha describes this representation of care as "drastically different from most of the ways care is thought of in the world," that is, as "an isolated, begrudgingly done task that is never a site of pleasure, joy, or community building."[46] In reimagining care work, Piepzna-Samarasinha not only offers a radical vision of disability justice-informed care networks and care ethics in the context of disability-oriented care, but also a vision for what revolutionary care work and ethics could look like in relation to reimagined climate and environmental disaster response networks. Rather than disaster response planning that considers people with disabilities and the elderly as an afterthought, disability justice-informed natural disaster response and relief efforts could organize in a way that centers and uplifts vulnerable communities, while questioning ableist assumptions, care ethics, and ableist status-quo disaster responses. Moreover, this reimagined disaster planning would view people with disabilities and the elderly not as burdensome, but as *essential* to building community and organizing politically in order to establish new natural disaster care networks where no one is left behind.

In addition to uplifting the voices of disability scholars, activists, and people with disabilities more broadly, it is essential that we look towards abolition movements in the development of climate disaster response modalities, most specifically for abolition

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43. In recent decades, climate-related disasters have disproportionately impacted individuals with disabilities and the elderly with increasing frequency and severity. To provide recent examples that summarize these impacts, the mean age of those lost to natural disasters including Hurricane Sandy, Hurricane Katrina, and the 2018 Camp Fire were 60 years old, 69 years old, and 79 years old, respectively. Disability advocates attribute these statistics, among others denoting the exceptional violence brought upon people with disabilities in natural disasters, to elderly and disabled populations' increasing social-isolation, ableist evacuation warnings, a lack of accessible transportation in evacuation and the ability to transport critical medical supplies, inaccessible shelters, the loss of paid or unpaid caregivers in emergencies, and the institutionalization of disabled and elderly populations, including assisted living facilities and nursing homes, which often lack emergency preparedness plans ("Deaths Associated with Hurricane Sandy," *CDC 62, no. 20*, May 24, 2013, 393-397, https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6220a1.htm; Joan Brunkard, Gonza Namulanda, and Raoult Ratard, "Hurricane Katrina Deaths, Louisiana, 2005," Disaster Medicine and Public Health Preparedness, August 28, 2008,ldh.la.gov/assets/docs/katrina/deceasedreports/KatrinaDeaths_082008.pdf; Alene Tchekmedyian and Esmeralda Bermudez, "California firestorm takes deadly toll on elderly; average age of victims identified so far is 79," *Los Angeles Times*, October 13, 2017, latimes.com/local/lanow/la-me-ln-norcal-fires-elderly-20171012-story.html.) For further discussion and analysis of these issues in a legal context, see *The Right to be Rescued*, directed by Jordan Melograna (2015; Seattle, WA: Disability Rights Washington, 2015), film.

44. Leah Lakshmi Piepzna-Samarasinha, Care Work, 44.

45. Ibid, 45-46.

46. Ibid.

movements' depiction of abolition as, "not only, or not even primarily, about abolition as a negative process of tearing down, but [...] also about building up, about creating new institutions."[47] Through this understanding of abolition, scholars further advance the transformative aspects of grassroots natural disaster responses beyond state influence. In a document titled, "Challenges and Pitfalls of Reform," compiled by Mariame Kaba, Project Nia, and Survived & Punished, various abolition-informed questions assess whether a movement is recuperative, liberatory, and promotes resilience, or whether it is alternatively harmful, exclusive and carceral. While each of the provided questions would substantially benefit the reimagination of climate disaster organizing beyond state institutions, some of the document's most rewarding questions include:

> Does it provide material relief? Does it leave out an especially marginalized group (people with criminal records, the undocumented, etc...)? Does it mobilize most affected for ongoing struggle? (i.e. Is this building power?) Does it seize space in which new social relations can be enacted? Does it spread awareness of its ideas (participatory not passive)? Does it have elite support? [if it does, it's probably not liberatory] Who benefits from this campaign, initiative, reform, form of resistance? Who doesn't, and why? Who is working on this initiative? Who is not? Why us? Why now?[48]

Through these questions, environmental justice and grassroots climate disaster response movements alike may assess, and constantly revisit, the ways in which their organizing strategies may follow and reflect the justice-oriented objectives of abolitionist and transformative justice movements. Most specifically, reimagined natural disaster "care networks" may revisit their movements' successes and shortcomings in their attempts to provide material relief to affected communities, center those most marginalized by these disasters, and altogether refuse to label sub-populations as undeserving of equitable climate disaster relief.

While abolition and disability justice-informed principles and questions for organizing remain essential to the success of grassroots climate disaster organizing that provides material relief, mobilizes affected communities, and centers those most marginalized, it is essential that these principles align with the fundamental assumptions of environmental justice movements. According to the Delegates to the First National People of Color Environmental Leadership Summit, which established the seventeen "Principles of Environmental Justice (EJ)," they do. Most specifically, the aforementioned theories developed by disability justice and abolitionist scholars align with Principle Two: "Environmental Justice demands that public policy be based on mutual respect and justice for all peoples, free from any form of discrimination or bias."[49]   The theories also align with Principle Five: "Environmental Justice affirms the fundamental right to political,

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47. Angela Y. Davis, *Abolition Democracy: Beyond Empire, Prisons, and Torture* (New York: Seven Stories Press, 2005), 73.

48. Mariame Kaba, Project Nia, and Survived and Punished, "Challenges and Pitfalls of Reforms," (document, August 2018), https://static1.squarespace.com/static/5a92f54baf209610a9b49b30/t/5c4a29babba2234e2a135e40/1548364219323/Challenges+and+Pitfalls+of+Reforms+-+Oct+29+2018+-+11-45+AM.pdf.

economic, cultural and environmental self-determination of all peoples."[50] They further align with Principle Seven: "Environmental Justice demands the right to participate as equal partners at every level of decision-making, including needs assessment, planning, implementation, enforcement and evaluation."[51] And finally, these theories align with Principle Nine: "Environmental Justice protects the right of victims of environmental injustice to receive full compensation and reparations for damages as well as quality health care."[52] Moreover, the modalities of grassroots disaster organizing theorized here also align with the Principles of Climate Justice, specifically Principle Two, to "protect all [...] people - regardless of race, gender, nationality, or socioeconomic status - and their communities equally from the environmental, health and social impacts of climate change," and furthermore, "ensure that any solutions implemented to respond to or mitigate climate change do not violate human or environmental rights."[53] Through the incorporation of disability justice and studies' theories of "care networks," "care webs," and reimagined care ethics, as well as the positive processes of abolition that focus on "building up" and "creating new institutions," the existing principles of environmental and climate justice may be expanded on and further advanced in order to address the limitations of existing, top-down and state-reliant responses to environmental and climate justice crises that fail to address the needs of vulnerable communities.[54]

In order to illustrate the radical possibilities and explicit advantages of disaster relief organizing efforts that both intentionally and inadvertently center the aforementioned theories, questions, and principles in practice, I turn to a recent example of a power-conscious care web-like network that formed where traditional, pre-established systems of state and non-profit relief demonstrated their significant limitations in providing assistance to systemically marginalized communities that had been impacted by a natural disaster.

Occupy Sandy: Hurricane Sandy, October 29th, 2012

Almost immediately following Hurricane Sandy's passing, *Occupy Sandy* emerged from the imagination of former *Occupy Wall Street* organizers who sought to provide immediate relief to an especially hard hit area of Brooklyn; a catalyst that would swell into one of the most impactful, front-line environmental disaster relief movements known to United States history. With its roots in the distribution of food and flashlights, *Occupy* would ultimately organize more than 60,000 volunteers, providing relief that ranged from volunteer dispatch, resource distribution, and education to mold remediation and demolition, ultimately coordinating a budget last marked at $1,377,433.57.[55] Behind a

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49. Delegates to the First National People of Color Environmental Leadership Summit, "The Principles of Environmental Justice (EJ)," *First National People of Color Environmental Leadership Summit*, October 24-27, 1991, http://www.ejnet.org/ej/principles.pdf.

50. Ibid.

51. Ibid.

52. Ibid.

53. Environmental Justice Leadership Forum on Climate Change, "Principles of Climate Justice," 2009, http://www.ejnet.org/ej/ejlf.pdf.

54. Angela Y. Davis, *Abolition Democracy*, 73.

55. Sharon Lerner. "How Sandy Saved Occupy," *The American Prospect*, November 27, 2012, https://prospect.org/civil-rights/sandy-saved-occupy/; Julia Nevárez, *Governing Disaster in Urban Environments: Climate Change Preparation and Adaptation After Hurricane Sandy* (Lanham, MD: Lexington Books, 2018), 96.

rallying cry of "Mutual Aid, Not Charity," *Occupy Sandy* reshaped the world's understanding of large-scale aid and relief in the context of environmental and climate disasters, thus challenging the existing dominant, charity-model modalities of disaster relief that often provide little to no short or long-term assistance to marginalized communities facing the fallout of a natural disaster.

As the *Occupy Sandy* movement gained local trust and regional traction, *Occupy* developed a website to disseminate relief information from organizers including: affected or displaced communities, like-minded relief groups, potential or active volunteers, donors, news media, government agencies, and major "relief" non-profits, among many others. Though their website no longer operates independently, it was retrieved through the Internet Archive as it existed on April 2nd, 2012 at the domain OccupySandy. net. Through a careful analysis of *Occupy Sandy's* "Frequently Asked Questions" page, we can see how *Occupy Sandy* positions itself as an organization that uplifts grassroots-only disaster response models and rejects state-sponsored or charity-centered relief efforts for their well-known limitations in providing immediate and long-term relief to communities affected by environmental and climate disasters.

> " Behind a rallying cry of "Mutual Aid, Not Charity," Occupy Sandy reshaped the world's understanding of large-scale aid and relief in the context of environmental and climate disasters, thus challenging the existing dominant, charity-model modalities of disaster relief that often provide little to no short or long-term assistance to marginalized communities facing the fallout of a natural disaster. "

Various self-characterizing statements on the *Occupy Sandy* website reveal the group's impetus of providing non-hierarchical, power-conscious relief that continuously centers and re-centers those most marginalized by Hurricane Sandy in both the present and foreseeable future. Within the website's "Frequently Asked Questions" subpage, three of its seven total responses carefully articulate the group's purpose, structure, and ideological frameworks, including answers to questions such as "What is Occupy Sandy doing?" "Who's in charge of Occupy Sandy?" and "What is mutual aid?" In reply, *Occupy Sandy* describes its intentions not only as responding "directly to the needs of affected communities," but further, as a movement that seeks to "empower communities to self-organize" and to "work...towards their own liberation and security." Furthermore, through *Occupy's* assistance in providing "concrete support," affected communities may "have the power to change the conditions of their own lives."[56] By characterizing itself as an organization that provides non-charity relief to impacted individuals and

communities, *Occupy Sandy* demonstrates the ways in which environmental and climate disaster response efforts may be reframed around the experiences and needs of those most impacted, displaced, or marginalized by natural disasters and their aftermath, thus providing a persistent vision for how communities may address ongoing crises and unceasing community resilience in the foreseeable future.

In addition to its self-described movement objectives, *Occupy Sandy* reaffirms its organizational structure as an anti-charity, "bottom-up system" that seeks to provide immediate, concrete relief to those affected by the disaster. *Occupy Sandy* expands on its non-hierarchical design in response to the question, "Who's in charge of Occupy Sandy?" writing: "We all are. Occupy is a horizontal movement. This means that we don't have any official leaders or authority figures. We strive to be a movement where all of us are empowered to take on leadership roles (especially those of us who generally feel disempowered by society)."[57] As a "horizontal movement," without any "official leaders or authority figures," *Occupy Sandy* reemphasizes its refusal of environmental disaster relief models frequently deployed by the state and the NPIC which often rely on designated specialists, screened volunteers, or state and military officials to serve as acceptable first-responders in natural disasters. Thus, through its tenacious assembly of a horizontally structured movement, *Occupy* demonstrates its commitment to organizing alongside volunteers of any background or experience-level, whether through donated time, work, or resources. For instance, one of *Occupy Sandy's* most notable organizing strategies remains its dedication to rapidly incorporating and dispatching volunteers to various *Occupy* relief projects. At one of *Occupy Sandy's* distribution "collectives" or "hubs," located at the Church of St. Luke and St. Matthew at 520 Clinton Avenue in Brooklyn, New York (hereafter identified as "520"), existing *Occupy* volunteers arranged first-time volunteer intake and coordination, donation collection, and supply organization and distribution.[58] After "less than ten seconds" of uncertainty as to where newcomers should go or who they should speak with, one first-time *Occupy* volunteer reported being greeted and directed to a table inside the church, where established *Occupy* volunteers registered the newcomer's contact information, availability, and any specialized or technical skills they had.[59] Following registration, returning *Occupy* organizers offered an orientation to new volunteers every half hour[60] in order to explain *Occupy Sandy's* commitment to mutual aid, their non-discriminatory practices, and various next steps for newcomers, including where to find additional orientations depending on their interests and abilities.[61] Those who could not lend their time or labor could arrange donations through repurposed wedding registries online,[62] which allowed donors to supply the exact items of need to

56. Occupy Sandy, "Frequently Asked Questions," Occupy Sandy Recovery, last modified April 2, 2013, http:// web.archive.org/web/20130402080229/http://occupysandy.net/volunteer/faqs/#.

57. Ibid.

58. Adam Greenfield, "A Diagram of Occupy Sandy," *Urban Omnibus*, February 6, 2013, www.urbanomnibus. net/2013/02/a-diagram-of-occupy-sandy/.

59. Ibid.

60. Erin Patrice O'Brien ("sandyvolunteer"), "Occupy Sandy volunteers handling food donations in Clinton Hill, Brooklyn," Tumblr, image, November 14, 2012, https://sandyvolunteer.tumblr.com/post/35726169437/ occupy-sandy-volunteers-handling-food-donations-in.

61. Ibid.

62. Occupy Sandy, "Occupy Sandy Registries," Occupy Sandy Recovery, last modified April 1, 2013, http://web. archive.org/web/20130401171349/http://occupysandy.net/registries/.

distribution centers, while others could participate through direct monetary donations to a highly transparent relief fund.[63]

Further critical to understanding *Occupy Sandy's* underlying motivations and structures is the organization's ideological and on-the-ground commitment to "mutual aid."[64] As stated on *Occupy Sandy's* website, "mutual aid" represents a "bottom-up system," while charity presents as a "top-down system."[65] While a charity may offer a "band aid" through the delivery of "bottled water to a community in need and then go home," mutual aid organizations may "take a longer look at why a community might be in need and explore longer-term solutions to addressing the problem."[66] For example, while *Occupy* engaged in short-term objectives such as distributing "between 10,000 and 15,000 meals each day" and creating "three major distribution hubs" only one month after the storm,[67] *Occupy* also engaged in long-term recovery efforts such as mold remediation services, water removal, and gutting houses in the "Respond and Rebuild" Project.[68] Moreover, *Occupy* contributed to the revival of a sustainable community center following Sandy's passing in order to build solidarity, distribute donations, serve food, and provide free medical care, among other services, through the "Restore YANA (You Are Never Alone) Project."[69] Through *Occupy's* definition of mutual aid and their commitment to this ethic in their own organizing, *Occupy Sandy* focuses on both the short-term distribution of tangible relief and a long-term vision of recovery rooted in knowledge of the structural inequalities often faced by marginalized communities experiencing amplified levels of harm and prolonged recovery processes following natural disasters.

In addition to *Occupy Sandy's* commitment to organizing principles such as mutual aid and long-term relief efforts that consider the structural inequalities faced by affected communities, *Occupy Sandy's* overwhelming success can be further attributed to the initial Occupy Sandy organizers' prior political organizing experiences and networks, which they obtained primarily through past affiliations with the *Occupy Wall Street* (OWS) movement. Through the knowledge they gained in these experiences, as well

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63. Occupy Sandy, "Occupy Sandy Relief NYC Fund," Occupy Sandy Recovery, last modified April 2, 2013, http://web.archive.org/web/20130402075806/http://occupysandy.net/funds/.

64. As further defined by the Big Door Brigade, "mutual aid" refers to "a form of political participation in which people take responsibility for caring for one another and changing political conditions, not just through symbolic acts or putting pressure on their representatives in government, but by actually building new social relations that are more survivable" (Big Door Brigade, "What Is Mutual Aid?," accessed May 9, 2020, bigdoorbrigade.com/what-is-mutual-aid/).

65. Occupy Sandy, "Frequently Asked Questions."

66. Ibid.

67. Lerner, "How Sandy Saved Occupy."

68. Occupy Sandy, "Respond and Rebuild," Occupy Sandy Recovery, last modified April 2, 2013, http://web.archive.org/web/20130402075831/http://occupysandy.net/project/respond-rebuild/.

69. Occupy Sandy, "The Restore YANA Project," Occupy Sandy Recovery, last modified April 2, 2013, web.archive.org/web/20130402080213/http://occupysandy.net/project/the-restore-yana-project/.

as the preexisting networks and connections formed in the OWS movement, *Occupy Sandy* organizers maintained the ability to effectively strategize and communicate their movement objectives to increasingly larger circles of organizers, donors, and volunteers. Moreover, these past experiences granted initial *Occupy Sandy* organizers an improved ability to confidently train and organize newcomers in the delivery of mutual aid. Despite Occupy Sandy's name and many of its initial volunteers' prior affiliations with the OWS movement, both of these groups maintained their political and ideological distance from one another; volunteers and donors participating in mutual aid disaster relief with *Occupy Sandy* were not at all required to support OWS or its various ideological positions. Regardless, it is critical to recognize the ways in which *Occupy Sandy* volunteers and the overall organization benefited from their prior organizing experiences and preexisting activist networks, which likely drastically improved their ability to confidently strategize and include others in a movement to provide mutual aid-informed relief efforts to affected communities.

While *Occupy Sandy* offers a grand vision of grassroots climate and environmental disaster organizing beyond state and nonprofit institutions, *Occupy Sandy* remains only one of numerous examples of care web-like, equitable natural disaster relief outside of state-determined limitations and control. Prior to concluding, it is critical to recognize additional grassroots natural disaster relief efforts that operate outside of the state, or even in-spite of the state, with all of their variations, even if I cannot discuss them extensively in this essay. For instance, a second example comes from the cataclysmic damage Hurricane Maria brought to Puerto Rico in 2017, when there emerged a collective of small-scale mutual aid-informed disaster relief groups or projects that organized under a larger umbrella group known as *Red de Apoyo Mutuo de Puerto Rico* (RAMPR) ("Mutual Support Network of Puerto Rico"), which still operates today. Within this collective, there exist various *Centros de Apoyo Mutuo* (CAMs) ("Mutual Support Centers"), each of which range in their focus, scale, and regions of operation. For example, *La Olla Común* ("The Common Pot") in Río Piedras, Puerto Rico—only one of fourteen CAMs affiliated with RAMPR—provides community breakfasts, rehabilitates abandoned buildings, and organizes[70] In earlier disasters, including Hurricane Katrina and the Camp Fire, other grassroots natural disaster relief efforts arose, including the previously mentioned *Common Ground Collective* in Hurricane Katrina. All of these groups represent only a small sample among seemingly endless care network-like, mutual aid-informed disaster relief organizations that operate deliberately and successfully beyond the state in natural disasters.

While *Occupy Sandy* and numerous other grassroots-led and anti-state environmental and climate disaster response movements were largely successful in the delivery of the power-conscious relief that centers marginalized and vulnerable communities, there still remain ways in which these organizations' activist modalities could be advanced further in their focus on delivering justice-oriented natural disaster relief beyond state institutions. As discussed previously, these organizations could look towards critical trans studies to understand the limitations of the state and its legal systems in movement building, disability justice scholars' notion of care webs and reimagined care ethics, and abolitionist scholars' critical attention to the ways in which justice movements aim to

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70. *La Olla Común*, "Centro de Apoyo Mutuo - La Olla Común, Río Piedras," RAMPR, accessed May 10, 2020, https://redapoyomutuo.com/la-olla-comun. For additional information related to the fourteen different *Centros de Apoyo Mutuo* that came from Hurricane Maria, see RAMPR, "Proyectos," RAMPR, Accessed May 11, 2020, redapoyomutuo.com/proyectos1menu.

continuously hold themselves accountable. Through the integration of this knowledge, future grassroots environmental and climate disaster relief "care networks" can build justice-oriented and power-conscious movements where *communities*, rather than oppressive state and non-profit institutions, become a central source of enduring support and resilience in natural disasters.

Conclusion

The Intergovernmental Panel on Climate Change (IPCC) has repeatedly indicated that anthropogenic climate change will lead to more severe and widespread extreme weather events, including tropical cyclones, intense precipitation, severe droughts, and heat waves, which can increase the severity of storms and storm surges alongside rising sea levels, and increase the likelihood and intensity of wildfires, respectively.[71] Even more critically, we know the impacts of climate change will have a disproportionate effect on those who contribute to it the least. In addressing these injustices, we must recognize that there exists no one-size-fits-all solution to environmental justice, climate justice, or justice in natural disaster responses. Each instance of inequity and each disaster demands a unique, scale and context-specific response that prioritizes and mobilizes those most distressed by climate change and state inaction in increasingly frequent and severe climate catastrophes. While achieving these transformative demands may at times require legal reforms or interactions between grassroots groups, the state, and other nonprofits, it is essential that the mass-mobilization of marginalized, vulnerable, and allied communities operate at the forefront of our collective efforts to address these challenges, with particular attention paid to the structural inequalities that produce and exacerbate these disasters. As Ruth Wilson Gilmore writes:

> Big problems require big solutions. Nothing happens all at once; big answers are the painstaking accumulation of smaller achievements. But dividing a problem into pieces in order to solve the whole thing is altogether different from defining a problem solely in terms of the bits that seem easier to fix. In the first instance, the remedy for each piece must develop in relation to its effect on actual or possible remedies for the other pieces. The other way is to solve a small part without considering whether the outcome strengthens or weakens the big problem's hold on the world. In other words, there's breaking down and then there's breaking down.[72]

The devastation felt by especially vulnerable and marginalized communities in recent natural disasters was, and remains, predictable. The long-standing history of state and non-profit inaction in at-risk communities during these calamitous events reflect the chronic and unceasing discriminatory practices of the state and Non-Profit Industrial Complex, whose logics determine which lives are valuable, who is worthy of rights, and therefore, who deserves rescue,

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71. IPCC, Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects (New York: Cambridge University Press), 1076-1077, ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-PartA_FINAL.pdf.

72. Ruth Wilson Gilmore, Foreword in The Struggle Within: *Prisons, Political Prisoners, and Mass Movements in the United States* (Oakland, CA: PM Press, 2014), viii.

relief, and aid in natural disasters.[73] These logics remain deeply-rooted in the racist, ableist, classist, heterosexist, and colonial foundations of the state. With this recognition, it is clear that we must turn toward grassroots-led climate and environmental disaster relief efforts that build solidarity, foster mutual aid, and center those most marginalized by these events. Through the adaptation of critical trans studies, disability justice, and abolitionist scholarship, in concert with critical environmental justice scholarship, these ground-up movements may advance towards achieving transformative change and true justice in our collective responses to both the slow violence of everyday environmental injustices and the more urgent environmental and climate disasters that most significantly and detrimentally affect marginalized and vulnerable communities.[74]

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73. My thinking in this vein is influenced by Lisa Cacho's interrogation of the ways in which value is relationally ascribed and denied to human lives based on gender, race, sexuality, national belonging, and legality (Lisa Marie Cacho, *Social Death: Racialized Rightlessness and the Criminalization of the Unprotected* (New York: New York University Press, 2012); Lisa Cacho, "Racialized Hauntings of the Devalued Dead," in *Strange Affinities: The Gender and Sexual Politics of Comparative Racialization* (Durham, NC: Duke University Press, 2011), 27.)

74. Nixon, *Slow Violence and the Environmentalism of the Poor.*

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"The Cult of the Yankee Mining Engineer: Engineering Nature, Race, and Labor in the US, Canada, and South Africa, 1886–1922"

Jessica Landau, Art History
"'Critical Habitat': Picturing Conservation, Extinction, and the American Animal in the Long Twentieth Century"

UNDERGRADUATE INTERNS

Alaina Bottens, Natural Resources & Environmental Sciences / Gender & Women's Studies

Sarah Gediman, History / Environmental Sustainability

Amanda Watson, English / Political Science

The Humanities Research Institute (HRI) at the University of Illinois at Urbana-Champaign fosters interdisciplinary study in the humanities, arts, and social sciences. Established in 1997 as the Illinois Program for Research in the Humanities, HRI is a vibrant hub for humanities activity on campus. We coordinate and host lectures, symposia, and panel discussions on a wide variety of topics, and we award prizes recognizing excellence in faculty and student humanities research. We convene distinguished scholars from around the world, and we support Illinois faculty and graduate student research through fellowships and a bi-monthly seminar. HRI cultivates collaborative faculty-driven initiatives through its Research Clusters; hosts multi-million-dollar external foundation grants; and supports faculty and graduate student reading groups.

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