The Ecopolitics of Truth and Sacrifice: An Ethnographic and Theological Study of Citizen Science, Environmental Justice, and Christian Witness in Coal's Sacrifice Zones

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Dissertation submitted in partial fulfillment of
the requirements for the degree of Doctor
of Philosophy in the Graduate Program in Religion
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ABSTRACT

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Abstract

Pursuing the good life today is costly. Contemporary conceptions of freedom, flourishing, and progress depend on using vast amounts of natural resources like coal and oil: Oil is used to drive to church, fabricate children's toys, and import food; coal illuminates school classrooms and powers ventilators. These things constitute our lives. Yet, at the sites where these resources are extracted, stored, processed, used, and wasted, people get sick and die young, babies are born with congenital defects, lands are appropriated, rivers and soils are polluted, and habitats are lost. The environmental harms produced by our resource-intensive economies are concentrated in places scholars call "environmental sacrifice zones." This project in constructive religious ethics examines these dynamics and seeks to understand the conditions and possibilities of confessing God as the giver of life while securing our lives through participation in economies that sacrifice others' lives and lands. How should Christians bear witness to God's life-giving economy of creation and salvation in a world littered with sacrifice zones?

Resources to answer this normative question are derived from analyzing the creation care organization Restoring Eden's response to several of coal's sacrifice zones and bringing fieldwork-derived concepts into constructive dialogue with theology, theory, and critical nature-society studies. Through ethnographic research and an extended case study of Restoring Eden's citizen science community health studies in coal's sacrifice zones in Central Appalachia, Chicago, and Birmingham, this study brings the practical wisdom of practitioners into academic debates. Though many residents in these sacrifice zones believed their poor health resulted from living near coal mines, waste sites, and coal plants, there was no scientific data about the correlation between community health and proximity to coal industrial sites. This absence inhibited efforts to end the sacrifices. Restoring Eden partnered with scientists, residents, activists, and volunteers from Christian colleges to fill this gap by making the human costs of

coal visible in numbers, charts, and graphs that were then published in health journals. Coal industry personnel and their allies launched a campaign to discredit the group's findings, politically defang them, and endow a research institute to provide knowledge that would favor industry. I contend that this case reveals the degree to which effective, concerted environmental action to contest sacrifice zones depends on local environmental knowledges that bear authority in public deliberations over coal issues.

My descriptive argument is that Restoring Eden's citizen science studies integrated faith, science, and environmental action through the concepts of creation, sacrifice, truth-telling, and witness. They responded to what they perceived as the false sacrifice of human and nonhuman creatures through developing a form of ecopolitical witness they called "citizen science as restorative truth-telling." Their integration of empirical, moral, and theological meanings of witness shows how science could be practiced to love God, neighbors, and creation.

The study begins by describing how the Restoring Eden projects foregrounded environmental knowledge production as a site of environmental practical reasoning about how to transform sacrifice zones. It then argues that sacrifice zones should be understood as sites of conflict between rival political ecologies of sacrifice: an extractivist ecology of sacrifice that sustains "our" lives and lands by putting "their" lives and lands to death and a Christological ecology of sacrifice that loves falsely sacrificed creatures by inventing practices that enable sacrifice zones to be transformed into sacred zones. Finally, science is shown to be enmeshed in these rival ecologies, and a set of practices to democratize and pluralize environmental knowledge is proposed as an aid to concerted action in response to extractivism's sacrifice zones. This account of ecopolitical witness is contrasted with the technocratic theory of action often manifested by a climate change framework: Ecopolitical witness ought to begin not with the hole in the sky but with the holes in the ground, in our societies, and in our hearts.

for Kendra, my partner in creativity,

for our boys, Langdon and Elias, who would do well to take after their mother,

and for Peter Illyn (1958-2020), who showed us that creative work flows from the heart

Contents

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I am deeply grateful to Peter Illyn, his wife Debbie, and our mutual friend Rusty Pritchard. Though Peter did not live to see the finished dissertation, his vision lies before and behind every word written here. A copy of the paper I presented to the Society of Christian Ethics was on Debbie's nightstand when Peter died. She read it after his death and told me she could hear her late husband's voice. I first encountered Peter while I was an undergraduate student, soon after he lost his left eye to ocular melanoma, and I last talked to him almost twenty years later, a month before his death, when he told me that a documentary film about an intimate relationship one man formed with an octopus off the coast of South Africa "restored my faith in God." On the day Peter entered hospice care, I dedicated a paper before the American Academy of Religion with these words: "I never heard Peter talk about 'battling' cancer. Instead, Peter has 'lived' for some twenty years with cancer. For the last ten of them, he fought for and alongside people who get cancer, birth defects, and so many debilitating illnesses simply because they happen to live in an environmental sacrifice zone." His long journey toward death showed me how to live. For that I am forever grateful.

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Introduction

I. Coming to the Topic, Responding to a Wound

Two stories can focus the concerns driving this study.

I first encountered what I later learned to call an "extractivist economy" in 2004 while walking through the upper Amazonian jungle in San Martín, Peru. The presence of a young, white American man in this part of the Amazon at that time signaled a relation either to drugs, mining, or humanitarianism. I fit the latter description. I had joined a small team of Christian human rights workers from Peru who were in the area documenting the testimonies of people affected by the country's twenty-year civil conflict. We ultimately hoped to achieve some level of national reconciliation. We were told of *desaparecidos* near this small village. After walking some distance along a surprisingly wide dirt path through the thick forest, I saw something that immediately answered a number of questions that had been building since I had arrived a few months earlier. In a moment of incongruity with the sylvan scenery, I saw large, green John Deere trucks hauling earth from a mine cut into the side of a hill. My teammates and I moved off the path to let a dump truck full of earth pass. This, I thought, must explain the wide path, the recently paved highway from the coast, the uproar over the *Acuerdo de Libre Comercio* (Free Trade Agreement), and the demographic shifts. The country's infrastructure, I would learn, was becoming increasingly ordered around mining and exporting natural resources from ever expanding extractive frontiers. The road connecting the jungle to the coast had been recently paved to more efficiently transport capital and labor in and raw material out. Yet those pathways also provided our human rights team access into the jungle and into relationships with those

living there. Natural goods flowing out, do-gooders flowing in, capital and labor flowing in, surprising alliances flowing out, all on the same road.

Just a few years later, in 2009, that road became a battlefield, a watershed moment in a new era characterized by social conflict over land and the environment. Spurred by high demand in China, a boom in the international value of raw materials, and a Peruvian president who embraced the neoliberal vision, extractive industries pushed deeper into indigenous territories in search of hydrocarbons and other sources of economic growth. The indigenous Awajun, together with other groups allied under the *Asociación Interétnica de Desarrollo de la Selva*, blocked that road near the city of Bagua to protest a new legislative package designed to give foreign extractive industries greater access to the hydrocarbons under the lands for which indigenous groups had fought for decades to get legal title. After a heated few weeks, the president suspended civil rights, declared a state of emergency, and ordered the military to end the blockade. In his estimation, because the nation's economic growth depended on exporting natural resources, then they simply must be mined, moved, and exported, whatever the costs to indigenous groups and their lands. The blockade ended with the incident now known as the *Baguazo*: 33 people dead, many more wounded and imprisoned, and a number of resignations among officials. The *Baguazo* signaled a new phase in what has long been called the "resource curse," the name given to the disquieting phenomenon that places abundant in natural resources tend to be cursed with poverty and conflict.

What began for me as an inchoate observation in 2004 slowly grew into a more systemic analysis at once wider and deeper than the Peruvian Amazon. The shifts in Peru resonated with patterns taking shape across the globe. Conflicts over natural resources and violent suppression of opposition to extractive industries seemed to be defining features of the emergent global order.

One scholar aptly named the situation "a race for what's left."[1] My learning on these matters was punctuated by the *Baguazo* of 2009, the Marikana massacre in South Africa in 2012, and reports by the NGO Global Witness about the increasingly "deadly environment" in which environmental and indigenous leaders across the world were routinely assassinated by groups linked to extractive industries. Among the victims were four Amazonian indigenous leaders, including a pastor, assassinated in Peru for resisting the timber industry's incursions on their land. And then Berta Cáceres was murdered in Honduras in 2016, just as I was beginning my doctoral studies in moral theology. As I developed a wider and deeper historical understanding of the reach and impact of natural resource extraction, I also noted the relative lack of sustained Christian scholarship on it. Though absent from scholarship, it was inescapably present in the everyday lives of Christians on the front lines: just as the organization I worked with in 2004 became increasingly entangled with contemporary socio-environmental conflicts while documenting the violations of a past political conflict, Christians were already assembling in places that had been "cursed" and "sacrificed" in the name of natural resource extraction and the projects it made possible.

Beginning in 2010, in the northern half of the hemisphere, a small creation care organization named Restoring Eden took Christian college students on spring break trips to the mountains of Central Appalachia. Restoring Eden wanted them to encounter their Creator anew and discover their calling to care for God's creation. Within a year, the group and their spring break volunteers ended up producing the first household-level scientific data about the human health costs of mountaintop removal coal mining in rural Appalachia. Their research showed higher rates of respiratory diseases, cancers, and other chronic, debilitating maladies, and it

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[1] Michael T. Klare, *The Race for What's Left: The Global Scramble for the World's Last Resources* (New York: Picador, 2012).

provided those fighting mountaintop removal with new ammo against the coal industry's efforts to paint them as crazy environmentalists and "tree huggers" who would rather sacrifice the jobs of Appalachian coal miners than lose their scenic views.

Peter Illyn, Restoring Eden's founder, had become a nationally recognized creation care leader when in 2009 he received a terminal cancer diagnosis: he had maybe six months, if he was lucky.[2] Buoyed by press coverage and grassroots fervor during what some called "the creation care decade," the time during the Bush presidency when environmental funders made common cause with evangelical groups preaching a green gospel, Restoring Eden was at the height of its power. But after the diagnosis, Peter laid off his staff and closed the group's offices. To his and his doctors' surprise, his body responded to treatments, and he kept not dying. So instead of rebuilding Restoring Eden, he decided to organize one-off spring break trips to try to convert as many young Christians to a creation-loving spirituality and activism as he could before he died. Having joined an interfaith witness tour of mountaintop removal not long before his diagnosis, he combined the witness tour model with the evangelical practice of short-term mission trips and the Christian college practice of spring break service trips. That first year, he learned that even though many Appalachian coalfield residents thought mountaintop removal was poisoning them and their families, nobody was doing research to test their hypothesis. Except, that is, for one health scientist at West Virginia University, Michael Hendryx. The two agreed to reorient Peter's Appalachia Witness Tours around the goal to complete door-to-door health surveys of households near mountaintop removal sites and control communities further away. That's what they did from 2011 to 2014.

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[2] I use the actual names of Peter Illyn and Restoring Eden for multiple reasons: Peter gave me permission to do so; I am not the first scholar to use his name and the name of his organization in scholarly writing; because the evangelical creation care world is small, it would not be difficult to identify the organization; and this case's particularity is what I am focusing on, not its representativeness of larger trends.

Four years of spring break projects and four peer-reviewed journal articles later, and Peter still alive, they took the model to Southside Chicago's Black and Latino neighborhoods and North Birmingham's African-American neighborhoods. Peter and Michael adapted the model to different demographics and different community-generated hypotheses about their poor health. But three things tied all the projects together: the Restoring Eden partnership had followed a trail of connections between Christ, coal, and common suffering at the hands of fossil fuel industries.[3] The Restoring Eden teams worked with local churches, non-religious scientists and environmentalists, and diverse groups of residents to criss-cross social borders, produce knowledge about the true but hidden costs of coal, and thus put the coal industry on the defensive.

I first heard of these Restoring Eden projects as the group was preparing for the Chicago study. Peter was looking for local partners to help with the project when he told me that the eastern coal industry launched a campaign against their work, including funding a research institute with $15 million to try to fight the volunteer-driven studies with well-compensated science. I thought, Why would the coal industry be so afraid of some studies carried out on a shoe-string budget? I was intrigued. I volunteered to translate their Chicago health survey into Spanish. Then I was asked to join the board of the human rights organization I worked with in Peru back in 2004. That's how I learned about the murders of the Amazonian pastor and Berta Cáceres. The dynamics I had started to research in Latin America seemed to be operating in my own backyard. Two years later, I was Peter's co-organizer of the Birmingham study when I attended an environmental justice town hall meeting in the Collegeville neighborhood at Bethel Baptist Church—the same church where Rev. Fred Shuttlesworth had been repeatedly bombed for his civil rights leadership of the Alabama Christian Movement for Human Rights in 1956.

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[3] In the case of Chicago, it was tar sands oil, not coal, but I write "coal" here for the sake of alliteration.

During two hours of panel presentations and audience testimony, people seamlessly wove together talk about pollution, politics, soil chemistry, and legal investigations with talk about Jesus, grace, prayer, stewardship of creation, Judas, faith, and love. I was astonished. The town hall organizers were not "faith-based," but to the people most affected, the issues at hand were most certainly matters of faith. One community leader demanded the event open with a prayer. Another said that, in spite of years of disappointment, she kept coming to meetings "because one thing about it, one day somebody gonna have a heart, and God will tell somebody to do something to help us. 'Cause we need help. … We got a lot of sick people here."

II. Research Questions and Methods

The questions I study initially emerged from the first story in Peru, where I had lived and worked with La Asociación Paz y Esperanza. Those questions eventually led me to study the events from the second story. I went as an intern to join Paz y Esperanza's ecumenical work for justice and reconciliation after Peru's twenty years of civil conflict. But I left with an abiding concern for the emerging social and ecological conflicts that were sealed in the *Baguazo* incident just a few years later. The conflicts I saw at the places where oil, gas, sand, and gold are extracted marked for me a kind of existential rupture: I worship a God who is revealed in creating, reconciling, and redeeming the world, yet I participate in a natural resource economy that fuels and feeds its vision of temporal flourishing by sacrificing communities, lands, and habitats in places out of my view. This conflict is the basis of my research question: How should Christians bear witness to God's economy of creation and salvation while they also participate in an extractivist economy that routinely, quietly, and largely invisibly sentences so many human and nonhuman creatures to premature death?

That is what I will call my "Big Question." There are some traditional ways to answer it in the field of Christian ethics. I could read significant, authoritative texts in my tradition to recover lost resources and name wrong turns. I could seek out marginalized or silenced texts and figures from my tradition and try to make them speak anew. I could borrow social and critical theories from other disciplines to revise the theological categories and doctrines I inherited. Scholars have used these methods to move conversations forward in important ways.

However, I am unconvinced that these historical, theoretical, and hermeneutical methods are adequate to the task of exploring and answering the very existential questions I am asking. From Montana to Appalachia and Peru to South Africa people are getting killed defending their lands and communities from extractive industries. Recovering, analyzing, and tweaking categories of thought might have some impact on human actions. But after fifteen years of involvement with Paz y Esperanza and other faith-based organizations committed to social justice, creation care, and human flourishing, I have noticed that practitioners "in the trenches" bring their multiple inheritances from Scripture, faith traditions, surrounding cultures, and social identities to bear on responding to real, concrete problems they and their communities face. Theirs is a practical wisdom to share. Christian reflection and deliberation over how to act in response to urgent social and ecological challenges needs to begin by listening to that wisdom if it is going to have something meaningful and purposeful to say to the contemporary moment.

Ethnographic fieldwork offers just such a path. Though I elaborate my methodology more fully in the next chapter, it suffices to state that qualitative and ethnographic research methods provide me a way to ask my "Big Question" vis-à-vis what I will call a "Small Question." Rather than take me only to the library, fieldwork has taken me into physical places where Christians engage with (religious, moral, cultural) others in practical reasoning—that is, in processes of reflection and deliberation that result in action—about what to do in response to the

problems generated by our natural resource economy. They give me a way to tap the practical wisdom of those who are actively trying to live faithfully within an extractivist economy. Rather than propose idealistic, conceptual, or abstract solutions to real-world problems, ethnographic methods ground my concepts and categories of thought in actual, real-world practices.

That is why I turned my attention to the small creation care organization Restoring Eden. What began as a series of interviews one summer became my dissertation research. Considering, in particular, a popular American sensibility that science, environmentalism, social action, and conservative Christian faith are not supposed to fit together, I was intrigued by Restoring Eden's distinctive model of citizen science. While not necessarily representative of a broader phenomenon, I found the case's exceptional status a refreshing way to break open stale categories and theories. Restoring Eden not only held science, environmentalism, social action, and faith together, but each aspect seemed to strengthen the others. I wanted to learn more. How did they integrate these in places destroyed for fossil fuels? Perhaps by understanding how they held these together, I might find a way to answer my "Big Question," a way that builds upon the practical wisdom of one small, fragile group making connections across racialized, cultural, and partisan divides on the edges of our natural resource economy. For it is the case that recent electoral and demographic maps of these three areas—Appalachia, Chicago, and Birmingham—index a set of social alienations and polarizations that have been long in the making: rural-urban, white-Black-Latino, Republican-Democrat. Yet Restoring Eden's work seems to have mapped these places differently—not by their alienations but by their latent commonalities. In all these places, people have deep histories with Christ, coal, and common suffering. And if the divisions between these groups are historical, not natural, then there might be some hope for working together and discovering a common life.

My “Small Question” is the following: How does Restoring Eden integrate science, environmental action, and Christian faith in coal’s sacrifice zones? This is the kind of question I can answer with ethnographic methods. Within this primary question are also two subsidiary ones: How did the Restoring Eden projects come about? And what impact have they had on environmental action? Because I am in search of practical wisdom amidst our natural resource-dependent political economy, it matters for my project how Restoring Eden came to integrate these elements into their theory and practice and what impact their model had, such as affecting actions to circumscribe the coal industry’s practices or forming Christian environmental leaders.

In short, the two stories detailed above can be merged into a twofold set of questions: The “Small Question” being largely descriptive, and the “Big Question” driven by my normative concern about participating as a Christian in a natural resource economy. How does Restoring Eden integrate science, environmental action, and Christian faith in coal’s sacrifice zones? And how might their work inform my research question about bearing witness to God’s economy of creation and salvation while participating in an extractivist economy that wastes lands and the human and other-than-human creatures that inhabit them?

III. Argument and Aims

Throughout the dissertation, I maintain an interplay between the “Small Question” and the “Big Question.” I draw resources from the former to bear on my thinking about the latter, and vice versa. One key example of this is my analysis of the environmental justice concept of a “sacrifice zone.” Though my fieldwork included a lot of talk about “the true costs of coal,” and similar notions, these costs were only rarely described as “sacrifices.” In chapter two, where I foreground the concept of a sacrifice zone, I develop the notion by drawing largely on the concept’s use by the environmental justice movement to oppose the logics and structural dynamics that would

concentrate environmental harms in some places in order to preserve the environmental goods of other places. In other words, I use resources drawn from my examination of the "Big Question" to draw out and clarify a significant dimension of the fieldwork. I do the reverse when, in chapters three and four, I develop a critical and constructive ecopolitical theology. There I lean largely on concepts and practices derived from my fieldwork and show how they can open up a more general understanding of how to live wisely amidst extractive economies and the sacrifice zones they produce. In this way, I maintain a generative tension between micro and macro, between the "Small Question" and the "Big Question."

This tension is complexly interwoven with another between descriptive and normative claims. Though my "Small Question" is primarily a descriptive one, it is not entirely so. For instance, as I explore in chapter one, I was personally involved, in surprising ways, in developing some of the field-derived concepts, such as Restoring Eden's slogan, "You can't count what you haven't measured, so sometimes justice begins with a clipboard." Peter developed this slogan, in part, through our deliberations about how we should carry out the Birmingham project. Conversely, my "Big Question" is not only a normative question about what Christians should do amidst an extractivist economy. It also requires that I describe and theorize an extractivist economy, which I do primarily in chapter three through engagement with theologians and social theorists. So the interplay between micro and macro questions is complexly interwoven with descriptive and normative arguments.

With this in mind, my argument is twofold. In response to my "Small Question," I will argue that the Restoring Eden projects integrated Christian faith, environmental action, and science through the thick concepts and practices of sacrifice, witness, truth-telling, and creation: They responded to coal's true but concealed costs by weaving together science and creation care into a complex form of truth-telling that bears witness both to the empirical realities of coal's

costs and to what they trust is true about God's relation to creatures and creation. Furthermore, they did so in such a way that they inserted new, scientifically authorized environmental knowledge about coal's true costs that opened up public deliberations over coal issues. These are the concepts that I examine throughout the dissertation.

My argument in response to the "Big Question" builds on this analysis of the role of environmental knowledge production in processes of environmental practical reasoning. Deliberating over what is to be done to address environmental issues relies heavily on scientific descriptions of environmental problems. However, what should we make of the fact that processes of generating and circulating scientific knowledge are themselves caught up in keeping coal's true costs invisible and, when not keeping them invisible, portraying them as natural (inevitable) and acceptable (justified)? Building on the exemplary witness of the Restoring Eden projects, I argue that Christians should get involved in producing environmental knowledge about the true costs of fossil fuels and, by extension, natural resourcification in general. In particular, I argue that they should democratize environmental knowledge by making sacrifice zones the primary sites of producing that knowledge. When they do so, they should expect to find others already there and thus expect to discover and build commonality with religious, moral, racialized, and epistemic others to contest false sacrificial logics and point toward a political ecology that is circumscribed by moral and theological limits and embedded within more primary moral and theological relations. One key entailment of this argument is that Christian action in response to environmental problems should focus primarily on sacrifice zones, not sustainability. More particularly, on the multiplication, intensification, and expansion of sacrifice zones. The problem is not primarily about extending current forms of life into the future but about confronting the sins and idolatries that produce, naturalize, and justify sacrifice zones. For Christians, the question should not be "How can we sustain human life on this planet?" but "How can we eliminate

sacrifice zones?" or "How can we transform sacrifice zones into zones of refuge for creatures in need of membership in the community of life?" By orienting the purpose and goals of environmental knowledge production according to these latter questions, Christians can confront idolatries and discover transformative possibilities latent in our extractivist economy's sacrifice zones. Stated otherwise, Christian environmental reasoning and action should not focus on technocratic regulatory regimes at state and international levels, as in climate action, but should move from sacrifice zones out, enabling sacrificed creatures to become the primary witnesses to God's restorative and regenerating work in creation.

My aims in this project are multiple. I aim to provide a thick description of the Restoring Eden citizen science projects; develop a dynamic ecopolitical theology that takes account of the whole divine economy of creation and salvation, as against tendencies to drive a wedge between God's creative and redemptive work; frame environmental action in existential terms of life and death, and thus not as a secondary kind of activity to be engaged in after one's more primary needs are met (as in the theory of "postmaterialism"); carry forward Christian theological traditions of thought, particularly Augustinian and Reformed traditions, and develop them in new ways for our eco-conscious age; geographize, or spatialize, Christian social thought by exploring relations between temporal notions, such as the *saeculum*, and spatial notions like sacrifice zones; and offer an empirically and theoretically informed account of environmental practical reasoning that can both explain the roles that science, ethics, and theology actually play in public deliberations about environmental issues and undergird practices intended to coordinate them in pursuit of a substantive vision of the good. I address some of these aims directly throughout the dissertation. Others are engaged directly only in the conclusion.

IV. Situating the Project

While the interdisciplinary nature of this project requires that I engage scholarship across the humanities and social sciences, the project is primarily a contribution to two broad scholarly debates. The first is about how to understand environmental issues and do environmental ethics in Christian moral and systematic theology. I pose these as responses to three questions: What do environmental issues mean? How should we understand the relation between making meaning of and acting on environmental problems? And how should we make meaning and deliberate over action amidst human diversity, asymmetries of power, and social structures? The second scholarly debate primarily involves scholars in the social sciences, and is about how to understand and theorize relations between nature, science, politics, religion, and culture in contemporary societies.

Christian theologians and ethicists have addressed environmental concerns since the explosive rise to public prominence of ecological consciousness and environmental fragility in the 1960s. Though scholars disagree about the roots and character of early environmental thought, few dispute that the 1960s were a watershed decade, with a flurry of literature that seeded the environmental laws and regulations that were put in place in the 1970s.[4] This literature included Rachel Carson's *Silent Spring* and Lynton Caldwell's paper, "Environment: A New Focus for Public Policy?," both in 1962, Lynn White's article "The Historical Roots of Our

[4] There is vigorous contemporary debate about the roots of environmental thought. Though figures like John Muir, Henry David Thoreau, and Aldo Leopold are often celebrated as the forerunners of modern environmentalism, critics have pointed to the fundamentally racist, ethnocentric, anti-indigenous, and masculinist character of their thought. Alternative accounts propose that we uncover the roots of environmental thought in class, gender, race, and ethnic struggles, such as, for instance, the Chartist movement, the women's club movement, and the struggle against the Southern slavocracy. At the very least, we can affirm that multiple streams fed the river of environmental politics that gathered pace in the 1960s and 70s. The racist, ethnocentric themes continued, as in the case of Garrett Hardin, who openly advocated for population control, cultural cleansing, and closed borders in the name of environmental sustainability.

Ecologic Crisis" in 1967, and Garrett Hardin's "The Tragedy of the Commons" in 1968.[5] Carson's book sought to make science an ally of environmental ethics and spirituality against industrial pollution. Caldwell introduced the concept of "environmental policy" and outlined what would become the National Environmental Policy Act, the foundation of the federal government's environmental policy. Through his critique of Christianity as the most anthropocentric religion in history, White foregrounded cosmology as the primary site of critical and ethical engagement with environmental matters, thus signaling that salvation stories were part of the problem. And Hardin established environmental problems in neo-Malthusian terms as problems of (self-interested) human nature that need economic institutions, like private property, and environmental management regimes to offset the human propensity to grow beyond limits and degrade the natural conditions of life. These influential texts established the terms for environmental thought, including much Christian thought: It should critique anthropocentric worldviews and ethics, promote an ecologically enlightened cosmology, integrate science into an ecological spirituality, decrease humanity's footprint, counteract human nature, and advocate for science-based environmental policies to be enacted largely through the state's managerial and regulatory powers. Theologians and ethicists certainly did not agree with all of the details contained in these texts. However, the overall structure and terms of environmental thought and action were relatively fixed.

Ecotheologians debate what meaning to make of environmental problems. Stated as a question, what do environmental issues mean? Some, in agreement with White, hold that traditional Christian thought and practice is anthropocentric and/or devalues material life and thus

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[5] Rachel Carson, *Silent Spring* (New York: Houghton Mifflin, [1962] 1994); Lynton K. Caldwell, "Environment: A New Focus for Public Policy?," *Public Administration Review* 23, no. 3 (1963): 132-39; Lynn White, "The Historical Roots of Our Ecologic Crisis," *Science* 155, no. 3767 (1967): 1203-7; Garrett Hardin, "The Tragedy of the Commons," *Science* 162, no. 3859 (1968): 1243-48.

requires revision if it is to become an ally of environmental thought and ethics.[6] Others maintain, against White, that Christianity is not ecologically diseased at its root, but that the problem lies instead in marginalized, lost, or secondary themes in Christian thought and practice that need to be recovered and developed.[7] Still others have argued that ecological problems should be understood as an aspect of social problems, such as gender inequality, racial injustice, and cultural imperialism, all of which can be mapped onto a dualistic cosmology that prizes mind (read as spiritual, male, white, Western, and active) over matter (read as natural, female, black, indigenous, and passive).[8] What characterizes much ecotheology is the consensus that whether or not White was right about Christianity, he was at least right that the problem was primarily cosmological in nature, and thus required ecologically reforming our worldviews. This consensus also entailed a marginalization of soteriology as either a hindrance to or an inessential element of ecotheology. But, Willis Jenkins protested, "Why should Christian theologians talk about nature and worldviews when Christianity centers around talk of nature and grace?"[9] Perhaps it seemed to many ecotheologians that "salvation talk" was "too individualistic, too dualist, too anthropocentric, too otherworldly, too hierarchical, or too gnostic to relate to ecological matters."[10] Jenkins's work inaugurated renewed ecotheological engagement with soteriology.

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[6] See Rosemary Radford Reuther, *Gaia and God: An Ecofeminist Theology of Earth Healing* (San Francisco: HarperSanFrancisco, 1992); Sally McFague, *The Body of God: An Ecological Theology* (Minneapolis: Fortress Press, 1993); Larry Rasmussen, *Earth Community, Earth Ethics* (Maryknoll, NY: Orbis, 1996).

[7] See Michael S. Northcott, *The Environment and Christian Ethics* (Cambridge: Cambridge University Press, 1996); H. Paul Santmire, *The Travail of Nature: The Ambiguous Ecological Promise of Christian Theology* (Minneapolis: Fortress Press, 1985).

[8] See Cynthia Moe-Lobeda, *Resisting Structural Evil: Love as Ecological-Economic Vocation* (Minneapolis: Fortress Press, 2013); George E. Tinker, *American Indian Liberation: A Theology of Sovereignty* (Maryknoll, NY: Orbis Books, 2008); Delores Williams, "Sin, Nature, and Black Women's Bodies," in *Ecofeminism and the Sacred*, ed. Carol J. Adams (New York: Continuum, 1993), 24-29.

[9] Willis Jenkins, *Ecologies of Grace: Environmental Ethics and Christian Theology* (New York: Oxford University Press, 2008), 13.

[10] Ibid., 14.

In this, Jenkins invoked a lesser figure in the flurry of 1960s literature on the emerging ecological crisis: the Lutheran theologian Joseph Sittler. Sittler, writing years before White, foregrounded soteriology, not cosmology, as the primary site of Christian environmental thought and practice.[11] I, like Jenkins, follow Sittler in this regard. In Christian thought, worldviews do not save anyone; God does. Though this might seem to de-center the doctrine of creation, it does not. Far from denigrating God's creative work or devaluing earthy materiality, a soteriological approach actually resonates with the early church's affirmation of created material life against its cultured despisers. The early church's theology of creation was developed in terms of God's *oikonomia*, or economy, of creation and salvation: in God's plan for and activities in creation, God's creative and redemptive work are inseparable; God's creative activity reaches its zenith in Jesus Christ. Historical theologian Paul Blowers noted that the early church doctrine of the divine *oikonomia* addressed matters of cosmology, cosmogony, and even anthropology as ancillary to the core of the Christian message, which was God's salvific action for us in the life, death, and resurrection of Jesus Christ.[12] In other words, Christology and soteriology were the key to a full-throated affirmation of material life.

It is important to note, however, that the issue here is not merely about properly locating ecology within a system of doctrine or even about deriving the right meaning of ecological issues. It is, rather, the need to understand how it is that environmental matters—that is, how a desire to wisely inhabit the earth—come to matter for Christian life and faith. As Jenkins argued, the issue

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[11] According to Sittler, with respect to the environmental crisis, "nothing short of a radical relocation and reconceptualization of the reality and doctrine of grace is an adequate answer to that problem." Joseph Sittler, *Essays on Nature and Grace* (Minneapolis: Fortress Press, 1972), 6. In God's salvific work Christians have a teaching "large enough and ready enough and interiorly most capable of articulating a theological relationship between theology and ecology." Joseph Sittler, "Ecological Commitment as Theological Responsibility," *Zygon* 5 (1970): 180.

[12] Paul Blowers, *Drama of the Divine Economy: Creator and Creation in Early Christian Theology and Piety* (New York: Oxford University Press, 2012), 2.

has to do with "a practical reasoning of the environment."[13] Jenkins set in relief a second question that has largely been examined by ethicists and that deals with the relationship between meaning and action. How does the meaning we make of environmental issues relate to environmental action? And, related to this, what is the role of the scholar in this movement from meaning to action?

Jenkins suggested that the way to think about this is through the concept of practical reasoning, which is a process of reasoning from our descriptions of environmental problems, including the meaning we make about them, to our deliberations about what should be done, and by whom, in response to those problems. He argued, adapting the sociologist Laurel Kearns's work in this area, that there are three predominant "ecologies of grace," or practical rationalities, about the environment in Christian ethics: stewardship, ecojustice, and ecological spirituality, which foreground human agency, nature's moral standing, and ecological personhood, respectively.[14] In his estimation, all three have unique strengths and weaknesses, but each one has internal resources to become a full-fledged strategy for making nature matter in Christian life and faith.

Jenkins, however, remained largely agnostic on the meaning of the gospel, focusing his "pragmatic" efforts on projects mapping, describing, and showing how different soteriological approaches could generate adequate responses to environmental problems.[15] In contrast, Laura Yordy developed a constructive, soteriological ecotheology and ethics she called "green

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[13] Jenkins, *Ecologies of Grace*, 59.

[14] Though Jenkins thinks these can generally be mapped onto evangelical, Catholic/liberal Protestant, and Orthodox soteriologies, their practitioners transcend these boundaries.

[15] Jenkins develops a threefold criteria for determining a strategy or practical rationality's environmental adequacy: it must "(1) describe morally significant environmental features, (2) assess multivalent human practices, and (3) integrate that environment and those practices into some model of human subjectivity." Ibid., 59. Jenkins's agnosticism continues into his second major book, *The Future of Ethics*, where he instead reveals the salvific logics native to different communities that respond to environmental problems as problems in need of Christian response.

witness."[16] Green witness figures environmental action as response to God's creative and redemptive work in the economy. Yordy positioned her argument against both liberal ecotheologies—which revise Christology, eschatology, and divine sovereignty when these seem out of step with an earth-honoring faith—on the one side, and managerial visions of stewardship, emphasizing the distinction between humanity and nature, on the other. Instead, she proposed that we conceptualize environmental action as witness to the God revealed in the economy of creation and salvation. In her words, "Prudence for Christians is the practical reasoning toward the action that best testifies to God's love for the world and to God's promises of the world's salvation."[17] Further, this Christian environmental prudence is fundamentally at odds with the world's. Yordy's "green witness" is ecclesial in character; it is a form of "ecological discipleship" that, rather than "make the church a participant in the 'environmental movement,'" seeks rather to "make the church more faithful by including the eschatological import of creation in its … 'way' of life that praises and witnesses to Father, Son and Holy Spirit."[18]

With respect to her foregrounding of environmental action as prudential Christian witness to the God revealed in the divine economy of creation and salvation, I seek to further Yordy's project. However, her ecclesiocentric, martyrological account of witness is built upon a set of sharp distinctions between church and world and faithfulness and effectiveness: There is a realm from which God raises up witnesses (the church) and a realm from which opposition to those witnesses arises (the world). The distinctions serve as a barrier that forecloses on the possibility

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[16] Laura Yordy, *Green Witness: Ecology, Ethics, and the Kingdom of God* (Eugene, OR: Cascade Books, 2008), 8. "Christians needs to re-view the biophysical universe as part of God's continuing creative activity that will culminate in the Kingdom, and Christian life as a communal testimony to that Kingdom. … [T]he church's most faithful mode of response to ecological issues is through Christian witness to the Kingdom of God."

[17] Ibid., 43.

[18] Ibid., 161.

of God's work in the world (beyond the visible church).[19] Yordy thus echoes the work of Stanley Hauerwas by setting up the (visible) church as the site of God's new creation and eschatological promise—it is the community characterized by, for instance, peace, abundance, reconciliation, and communion—and the world as the site of the old creation caught up in sin, violence, impatience, and managerialism. In the encounter between church and world, the only authentic option for the church is to prioritize faithfulness over effectiveness, and so invite persecution and martyrdom. Yordy thus echoes Hauerwas, who wrote, "The fundamental form of witness by Christians is called martyrdom."[20] In short, Yordy prematurely closes off theological attention to God's work of raising up witnesses wherever they might be found, including in realms beyond the visible church.

Yet, according to Jenkins, this kind of attention to God's work beyond our conceptions of "church" is exactly what is needed amidst environmental problems that are (1) without precedent and (2) so complex and "wicked" that they threaten to overwhelm our moral agency and our practical reasoning abilities. Problems like climate change and the Anthropocene, for instance, threaten to render all our attempts to address them meaningless and ineffective.[21] Yordy ultimately succumbs to what Jenkins calls "the cosmological temptation," but which we might better call a conceptual temptation. This is the temptation to pretend that scholars are the primary agents of environmental response because they are the ones best positioned to ecologically revise our worldviews, narratives, and concepts and provide guidance for how they might be applied to

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[19] See, for instance, the following passages: "Christian prudence is sometimes the opposite of secular prudence" (43); "In order for the church to witness it must first be visible, not having 'disappeared' into innocuous assimilation with secular culture" (43); because "the standard for Christian action … is not efficacy, but faithfulness, … Christian prudence is sometimes the opposite of secular prudence (which usually equates with means-end thinking)" (117-18); "The church is the primary bearer of testimony to the Kingdom of God" 124); "The church … stands outside secular politics" (139).

[20] Stanley Hauerwas, *Approaching the End: Eschatological Reflection on Church, Politics, and Life* (Grand Rapids, MI: W.B. Eerdmans Press, 2013), 44.

[21] Willis Jenkins, *The Future of Ethics: Sustainability, Social Justice, and Religious Creativity* (Washington, DC: Georgetown University Press, 2013), especially 67-110.

particular contexts. In the face of unprecedented problems, Jenkins counters, it is better to start not with the confidence that we (scholars) have the categories and practices to address the problem but with recognizing our "moral incompetence."[22] Then, ethicists might leave their libraries and seek out and pay attention to how communities of practice actually make sense of and respond to environmental problems; when ethicists do this, they are likely to find that practitioners often draw widely from their multiple moral and religious traditions and creatively adapt them in response to new problems. In other words, the moral creativity and theological wisdom emerging from sites of response might hold the key to generating concepts and practices that can answer unprecedented and overwhelming problems. A sharp church-world distinction may actually prevent ethicists from discerning how God might be at work in the complex, daily realities in which moral life is lived; it prevents us from approaching others as if they might have something to teach us about being wise and faithful witnesses.

In this way, Jenkins draws attention to the third question within which I situate my project in ecotheology and ethics: How should we make meaning of and act on environmental problems amidst social structures, asymmetries of power, and the messy contexts of everyday Christian life and experience with those who are both like and unlike us? If matters of meaning are largely examined by ecotheologians and the connections between meaning and action by Christian ethicists, scholars addressing this third question engage with political theology, broadly understood to include critical theologies of liberation from oppressive and intersecting structures of race, class, and gender. For example, Michael Northcott examined climate change through the

[22] Jenkins's approach can thus be contrasted with Kevin O'Brien's work, which argues that we do have the practices and categories to respond to environmental problems. See Kevin O'Brien, *The Violence of Climate Change: Lessons of Resistance from Nonviolent Activists* (Washington, DC: Georgetown University Press, 2017).

lens of political theology, particularly its Jewish messianist branch.[23] Peter Manley Scott engaged with ecosocialist, ecofeminist, and other critical political-ecological theories in his development of "a political theology of nature."[24] Cynthia Moe-Lobeda developed a constructive analysis of how environmental issues intersect with economic and gender injustice.[25] James Cone argued that a theological account ought to examine the intersections of racism and ecological degradation; Emilie Townes and Delores Williams added the gender dimension.[26] George Tinker developed an ecopolitical theology focused on American indigenous history and culture.[27] Daniel Castillo brought Latin American liberation theology into conversation with political ecology.[28] The recent volume *Common Goods: Economy, Ecology, and Political Theology* manifests this intersectional analysis as it incorporates critical theory into ecotheology and ethics.[29] In various ways, these scholars all attempt to link environmental thought to the issue of human difference amidst social structures and asymmetries of power.

My project can be understood as a contribution to these three questions about meaning, action, and politics in Christian environmental thought. I am after an account of environmental practical reasoning that can open up public deliberation over environmental sacrifices. In what follows, I develop an account of meaning that situates environmental issues within the context of God's being and action revealed in the economy of creation and salvation. My account of action

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[23] Michael S. Northcott, *A Political Theology of Climate Change* (Grand Rapids, MI: W.B. Eerdmans Press, 2013).

[24] Peter Manley Scott, *A Political Theology of Nature* (Cambridge: Cambridge University Press, 2003).

[25] Moe-Lobeda, *Resisting Structural Evil*.

[26] James Cone, "Whose Earth is it Anyway?," in *Earth Habitat: Eco-Injustice and the Church's Response*, eds. Dieter Hessel and Larry Rasmussen (Minneapolis: Fortress Press, 2001), 23-32; Emilie M. Townes, *In a Blaze of Glory: Womanist Spirituality as Social Witness* (Nashville: Abingdon Press, 1995), 47-67; and Williams, "Sin, Nature, and Black Women's Bodies."

[27] Tinker, *American Indian Liberation*.

[28] Daniel Castillo, *An Ecological Theology of Liberation: Salvation and Political Ecology* (Maryknoll: Orbis Books, 2019).

[29] Melanie Johnson-DeBaufre, Catherine Keller, and Elias Ortega-Aponte, eds., *Common Goods: Economy, Ecology, and Political Theology* (New York: Fordham University Press, 2015).

builds on Jenkins's and Yordy's work on environmental practical reasoning: I bring the former's attention to practices into conversation with the latter's primary metaphor of witness. And I seek to contribute to emerging ecopolitical-theological frameworks by closely examining one case study that both challenges existing social and critical theories and, by rendering them accountable to communities of practice, reformulates them as an aid to Christian ecopolitical witness.

While many scholars in ecotheology and ethics have critically engaged Lynn White's cosmological focus and embraced Rachel Carson's effort to make science an ally of environmental ethics and spirituality, very little scholarship has critically assessed the technocratic, statist vision that has driven so much of the modern environmental movement. In my account, Christian witness is situated in relation to state and market entities as primarily a project in democratizing environmental action; it is thus critical of the modern environmental movement's liberalizing, technocratic, and centralizing impulses, as galvanized by the influential vision set out by Garrett Hardin and Lynton Caldwell in the 1960s. The problem with these impulses can be understood with the aid of a metaphor: Just as Hurricane Maria struck Puerto Rico in 2017 and knocked out the one power plant that provided most of the island's electricity, so was environmental power in the U.S., concentrated in Washington, vulnerable to being blacked out by the shifting winds of partisan politics, particularly the category 5 hurricane named Donald Trump.

Beyond these three questions, my project can also be seen in relation to a maturation in ecotheology and ethics from big frameworks to specific issues. Recent scholars have addressed the very specific histories, contexts, and meanings of food and agriculture, water resources,

animals, climate change, natural resources, and mining.[30] My project continues this work of relating wider theological frameworks to particularist analysis.

Finally, my project contributes also to wider debates—beyond theology—about the nature of contemporary environmental problems and how to examine and respond to them. In particular, I engage a body of scholarship that can be grouped together as critical nature-society studies; it critically analyzes nature, particularly relations between nature and society, by both exposing the political dimensions of supposedly non-political theories and examining ecological problems as embedded within the power-charged and asymmetrical social relations examined in political economy. By critical nature-society studies or political ecology, broadly understood, I mean political ecology proper, cultural anthropology, science and technology studies (STS), political geography, ecological economics, and the environmental humanities.

Political ecologist Paul Robbins helpfully distinguished between "apolitical ecologies" and "political ecologies."[31] The former's two dominant types are "ecoscarcity" and "modernization"; they both offer apolitical answers to political questions. "Ecoscarcity" poses environmental problems in naturalizing terms: non-human nature is ultimately scarce and human population growth is rapacious, so population must either be controlled or, according to economic

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[30] For ecotheological treatments of food and agriculture, see Norman Wirzba, *Food and Faith: A Theology of Eating* (New York: Cambridge University Press, 2011); for water resources, see Christiana Zenner, *Just Water: Theology, Ethics, and Fresh Water Crises*, rev. ed. (Maryknoll, NY: Orbis Books, 2018); for animals, see David L. Clough, *On Animals, Volume 1: Systematic Theology* (New York: T&T Clark, 2012) and *On Animals, Volume 2: Theological Ethics* (New York: T&T Clark, 2020); for climate change, see Michael Northcott and Peter M. Scott, eds., *Systematic Theology and Climate Change: Ecumenical Perspectives* (New York: Routledge, 2014); for natural resources, see Christiana Z. Peppard and Andrea Vicini, S.J., eds., *Just Sustainability: Technology, Ecology, and Resource Extraction* (Maryknoll, NY: Orbis Books, 2015); and for mining, see William P. George, *Mining Morality: Prospecting for Ethics in a Wounded World* (Lanham: Lexington Books, 2019).

[31] Paul Robbins, *Political Ecology: A Critical Introduction*, 2nd ed. (Hoboken, NJ: Wiley-Blackwell, 2011), 14-18.

optimists, markets must be permitted to naturally resolve the problem.[32] Though described as simply an "apolitical" description of nature, ecoscarcity's proponents have nevertheless explicitly fought against policies that would exacerbate the problem, such as providing social services to poor populations or food to populations experiencing famine. Human suffering, in this account, becomes simply the outworking of natural forces, such as the market's invisible hand. "Ecological modernization" is fundamentally technocratic in nature; it holds that the ecological crisis is the result of inadequate adoption and implementation of modern management techniques, scientific knowledges, technologies, and economic efficiencies.[33] It is enshrined in the notion of "sustainable development," which is the idea that economic growth and ecological sustainability can, through bureaucratic management and/or market interventions, advance together. Not only does this go against historical evidence and replace non-Western knowledges with modern ones, it also mandates institutional and political changes at every level.[34]

Robbins draws two lessons from ecoscarcity and modernization. First, these apolitical approaches tend to ignore the very political-economic forces that are major contributors to ecological problems. And second, while claiming "even-handed objectivity," they are implicitly political. "It is not so much that political ecology is 'more political' than these other approaches to the environment. Rather it is simply more *explicit* in its normative goals and more outspoken about the assumptions from which its research is conducted."[35]

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[32] Robbins points to Thomas Malthus's *Essay on the Principle of Population* (1793), Paul Ehrlich's *The Population Bomb* (Cutchogue, NY: Buccaneer Books, 1968), and the Club of Rome's "Limits to Growth" (1972).

[33] Robbins, *Political Ecology*, 18-19.

[34] Political ecologists, for instance, have shown how even conservation and sustainable development projects have produced environmental injustices and new forms of poverty and environmental change.

[35] Ibid., 19 (emphasis in original).

A number of critical nature-society scholars have also extended political ecology beyond a narrow focus on joining together political-economic analysis and environmental issues. Cultural anthropologists at the forefront of "the ontological turn" in anthropology, for instance, such as Marisol de la Cadena, Eduardo Kohn, and Mario Blaser, have argued that nature-society analysis must directly engage matters of ontology—matters of "what is there." Otherwise, it risks perpetuating modern ontological assumptions, such as conceptions of culture, that impede real progress on political-ecological issues. Similarly, Bruno Latour argues that political ecologists have not gone far enough in this critical analysis, since they have not incorporated STS analysis of how "nature" and "society" are always mediated, or represented, in characteristically modern ways by scientists, on the one hand, and politicians, on the other. Therefore, Latour argues, "we will have to deal simultaneously with the sciences, with natures, and with politics," because "*oikos, logos, phusus,* and *polis* remain real enigmas so long as the four concepts are not put into play *at the same time*."[36] This entails "that the enigma of scientific production must be repositioned at the very core of political ecology." According to Latour, then, the pressing task is not to bring nature into politics (since it has always been there) but to consider how to bring the sciences into democracy. In their unique ways, ontological anthropologists and STS scholars have foregrounded matters of "what is there," how "what is there" is represented in our political life, and what is to be done when our truths about "what is there" are in conflict with one another. As Latour notes in his recent work, these matters demand an engagement with religion and theology.

These debates in critical nature-society studies touch on religion in two ways. First, ecotheologians and ethicists have not given enough attention to the forms of practical reasoning and political discernment that ought to attend someone's conversion to environmental care and

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[36] Bruno Latour, *Politics of Nature: How to Bring the Sciences into Democracy* (Cambridge, MA: Harvard University Press, 2004), 2-3 (emphasis original).

concern. Once someone (or some community) comes to care about God's material creation, what should they do? Beyond suggesting changes in one's personal life and behaviors, and perhaps also in one's ecclesial context, when it comes to broader public matters, most ecotheologians and ethicists explicitly or implicitly endorse the interpretations and proposals generated by apolitical ecologies. I want to problematize that. Second, critical nature-society studies has not sustained any critical engagement with religion and theology, tending instead to reduce religious phenomena to an aspect of culture. Yet, as I observed, there is a more expansive paradigm emerging around the question of ontology; this approach does invite greater attention to religious and theological dynamics, as in Cadena's "earth-beings" and Latour's "Gaia."[37] In my development of an "ecopolitical theology," my intent is exactly this: to further this expansion of the concept of political ecology to require an engagement with theology. To Latour's mélange of *oikos*, *logos*, *phusus*, and *polis* I add *theos*.

V. Limits and Scope of the Study

It is important to be clear about what this study is not. First, it is not an Appalachian studies project or a study of mountaintop removal (or, for that matter, a study of life in North Birmingham). Though Central Appalachia was the place that incubated the Restoring Eden health studies that sought to address mountaintop removal, it is not my focus.[38] My focus is the Restoring Eden projects and the people associated with them, particularly in their movement from

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[37] Marisol de la Cadena, *Earth Beings: Ecologies of Practice across Andean Worlds* (Durham, NC: Duke University Press, 2015); Bruno Latour, *Facing Gaia: Eight Lectures on the New Climatic Regime*, trans. Catherine Porter (Medford, MA: Polity Press, 2017).

[38] Scholars in religious studies and Christian ethics already have done this. See Joseph D. Witt, *Religion and Resistance in Appalachia: Faith and the Fight Against Mountaintop Removal Coal Mining* (Lexington, KY: University Press of Kentucky, 2016); and Andrew Thompson, *Sacred Mountains: A Christian Ethical Approach to Mountaintop Removal* (Lexington, KY: University Press of Kentucky, 2015).

Appalachia to other places where the organizers thought they could intervene in analogous problems. In other words, my focus is the set of relationships, practices, and people who developed and carried out the citizen science projects and then adapted them to new contexts.

Second, this is not an "orthodox" ethnography. It is not a thick description of a group of people, a place, or an event. My concerns transcend the traditional descriptive task of ethnographic research and writing. As I stated earlier, my ethnographically answerable "Small Question" is intended to provide me with field-derived concepts with which to give a response to my "Big Question" about how to live wisely and faithfully amidst an economy that concentrates its harms in some places so that its goods might be experienced in other places. A better way to describe this project is that it is an ethnographically informed, theologically driven, and theoretically engaged study of faithful environmental practical reasoning amidst extractive political economies. It is an examination of the existential life-and-death stakes of environmental knowledge and action.

Third, this is not an endorsement of the evangelical creation care approach as the best framework for Christian environmentalism. While Restoring Eden was one of the most significant evangelical organizations to emerge from the creation care movement, I am uninterested in naturalizing typologies of Christian environmentalism, especially "evangelical" forms of creation care.[39] While typological methods might make some dynamics clearer, their value is limited, especially since, as in my case study, most individuals and groups are not committed to the distinctions scholars draw between types. In fact, Restoring Eden was always seen as the radical wing of that movement, perhaps because they drew widely from diverse

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[39] Willis Jenkins's threefold typology in *Ecologies of Grace* is typical of this kind of mapping, typologizing project; he specifically draws on sociologist Laurel Kearns's work in this area. Joseph Witt also adapts this threefold framework in his study of religion and resistance in Appalachia; he organizes the book around three types: seeking justice (Catholics and liberal Protestants), caring for creation (evangelicals), and defending mother earth (ecospiritualities, Christian and non-Christian).

Christian and secular sources, depending on what they felt was appropriate.[40] They also often critiqued the "evangelical" label and partnered with groups regardless of their theological affinity. Though I do not focus on comparison in this study, Restoring Eden's organizing approach to environmental action contrasts with, for instance, the Evangelical Environmental Network, which has focused largely on mobilizing climate change policy advocacy in Washington, D.C. But my intent is not to carry forward an evangelical creation care project; it is to ask how this organization and its citizen science projects might inform wider debates about how to understand and respond to environmental problems. Its very status as an anomaly is what makes it so generative for theological and ethical reflection.[41]

Lastly, there are many themes from my fieldwork that I could have focused on but did not. Related to my previous point, I could have compared Restoring Eden with the wider evangelical creation care movement or Christian environmental organizations, more generally. Peter often contrasted Restoring Eden's approach to other groups; I name some of these contrasts without examining them closely, because my primary focus is the health studies. I also could have focused—but did not focus—on a critique of the Restoring Eden projects, particularly with respect to racial, gender, class, and paternalistic dynamics. These were all present, to varying degrees. In fact, the team that arose to take on leadership of the Birmingham project, after Peter's need for intensive cancer treatments no longer allowed him to travel, was composed of a young, working class Latina woman from Appalachia; a young, white, wealthy woman from Birmingham; a middle-aged, male, African-American pastor from Atlanta; and myself, a white,

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[40] For a study of how Restoring Eden was situated within the wider evangelical creation care movement, see Melanie Gish, *God's Wounded World: American Evangelicals and the Challenge of Environmentalism* (Waco, TX: Baylor University Press, 2020), especially 78-84.

[41] For a positive assessment of anomalous cases and what analysis of them can contribute to wider theory, see Michael Burawoy, "The Extended Case Method," *Sociological Theory* 16, no. 1 (March 1998): 4-33.

middle class man originally from New Jersey. And, though it was a consequential part of the story, the fact that the leadership team eventually dissolved and the project died, was an element I chose not to focus on here. Had I done so, my analysis would have emphasized the health study projects' fragility, rather than their method, which is my primary focus. Similarly, the way Peter navigated the Birmingham project showed both that there were many dimensions of his identity, such as his whiteness and privilege, of which he was not aware; that said, he was on a journey of discovering and challenging some of these through his efforts to understand redlining, race, and environmental injustice in the South. While I attend to these dynamics, they are not the focus of this study.

VI. Chapter Outline and Structure of the Study

The dissertation is structured around describing the Restoring Eden projects, interpreting their significance, and applying the concepts derived from my analysis of the fieldwork to larger questions about living in an extractivist economy. It begins with the Restoring Eden projects, describing what they are and what they do, and then examines the problem to which they are a response. This leads into two hermeneutical chapters, where I flesh out an analytical paradigm. Finally, this analysis provides me with a way to return to the Restoring Eden projects to ask how they might inform an account of environmental practical reason amidst our extractivist economy, particularly the role science can play in attempts to transform unlivable places into places of refuge and life for wasted creatures.

The first chapter centers on the object of study, which is Restoring Eden's use of citizen science in response to the environmental injustices encountered in Central Appalachia, Chicago, and Birmingham. By making the democratization of environmental knowledge a key aspect of their response, Restoring Eden showed that methods are an essential aspect of environmental

practical reasoning. Because of the unique nature of my project—that is, I am studying a series of studies—in this chapter I also flesh out my methodology, using Restoring Eden's practical methodology to inform my use of ethnographic methods.

Chapter two asks, what was the problem Restoring Eden sought to address with citizen science? I answer this by examining one aspect of the fieldwork, the notion of an "environmental sacrifice zone," and bringing it into close engagement with the history and theory of environmental justice. The Restoring Eden projects should be understood as responding to the forces that make parts of Appalachia, Chicago, and Birmingham into sacrifice zones, and these places should be understood as sites of conflict between rival political ecologies of sacrifice.

Chapters three and four develop this argument by constructing an ecopolitical hermeneutics of sacrifice. Chapter three asks after the forces that produce Appalachia, Chicago, and Birmingham as sacrifice zones—places where our extractivist economy's harms are concentrated. I draw on Latin American political ecology and Augustinian theology to theorize extractivism as a political ecology of false sacrifice. As such, it functions as a rival salvation story at odds with God's work in creation through Christ and the Spirit.

Chapter four develops the positive side of the ecopolitical hermeneutics of sacrifice. My question is about how we should understand the assemblages of people, ideas, practices, and ecological relations that resist the production of sacrifice zones. Following the fieldwork, I address the thorny theological issue of sacrifice and its relation to salvation, ultimately showing why I think Christians ought to center Christology, soteriology, and what I call "the priestly frame" in our ecopolitical theology. This approach conceptualizes truth-telling as a form of bearing witness to the reality that the world's life is a divine gift.

The final chapter returns to my object of analysis from chapter one and asks how science is caught up in the tensions and conflicts between the rival political ecologies of sacrifice

explored in the previous two chapters. I maintain that science's practitioners can either aid and abet extractivism by promoting the idea that science is a "neutral" form of knowledge, or they can support a political ecology of true sacrifice through scientific practices that open up public debates and democratize environmental knowledge and action. Finally, I develop a theoretical account of science in this latter mode as a threefold form of witness.

My analysis of the Restoring Eden citizen science projects reveals the central importance of environmental knowledge in either hindering or generating concerted, constructive environmental action. It also shows the existential importance of democratizing the production of environmental knowledge as a work of love. Without democratizing environmental knowledge and power, the agents of environmental action are at risk of asking the wrong questions, solving the wrong problems, and even sustaining social and ecological relationships that produce, intensify, and multiply sacrifice zones. But even beyond this attention to environmental knowledge and action, my study ultimately suggests that Christian witness amidst our extractivist economy ought to begin by following God into sacrifice zones and enabling them to become places where the truth is told, lived, and loved.

Chapter 1. Environmental Practical Reasoning and a Witness Methodology

You can't count what you haven't measured, so sometimes justice begins with a clipboard!
- Peter Illyn[1]

Moral reason has a vast stake in description.
- Oliver O'Donovan[2]

Our encounter at Eli's falafel shop was an accident. I walked with Peter, founder of the creation care organization Restoring Eden, to dinner at a barbeque place in a strip mall south of Birmingham, Alabama, but it was closed. When we ended up at Eli's we were surprised to find it filled with college students wearing Duke sweatshirts—my home institution. They were on a civil rights pilgrimage through the Deep South. We chatted with the trip leaders about the environmental justice project that brought us to town, and they asked us to present it to the whole group.

A seasoned organizer with an eye for opportunity, Peter never declined such invitations. He stood up and jumped right in. But since starting an experimental treatment for the ocular melanoma that had claimed his left eye years before, his thinking was just as likely to end in brilliant lucidity as in a haze of "brain fog." He listed off the relevant details: a coal plant polluting residential neighborhoods, sick residents, a legacy of racist redlining, a bribery scandal to block cleanup efforts, scientists kept out of the neighborhoods. But the bewildered faces before us confirmed that he was struggling to tie the facts together into a coherent story. He needed help. So, he turned to me, confident I could provide it.

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[1] Fieldnotes, 3/13/18.

[2] Oliver O'Donovan, *Self, World, and Time: Ethics as Theology, Volume 1* (Grand Rapids, MI: W.B. Eerdmans Publishing Co., 2013), 11.

"Ryan," he said, energized by a conversation we had had earlier while stuck in Birmingham traffic, "tell them about your theology of invisibility!"

I froze. I'd never used that phrase. What was he referring to? My memory fixated instead on how terrified I had felt in the passenger seat of a rental car driven by a one-eyed man through downtown Birmingham during rush hour. Whatever eventually left my mouth was clearly not what Peter had in mind. So, with years of practice putting his marketing skills toward creation care activism, he rephrased it in his own words: "You can't count what you haven't measured, so sometimes justice begins with a clipboard!"

A powerful organizing slogan was born, and I had unwittingly helped it come into being. By then, I was a few years into my ethnographic research with the citizen science projects Restoring Eden organized in places where coal was mined in Appalachia, petcoke was stored in Chicago, and coal was burned in Birmingham.[3] I wanted to understand how they integrated science, environmental action, and Christian faith. Their projects struck me as a promising response to the troubling yet largely hidden costs of our carbon-intensive ways of life, and I wanted to learn more.

Their first projects in Kentucky, West Virginia, and Virginia caused a stir. When they showed an association between poor community health and proximity to coal mining operations, the coal industry campaigned to discredit their work. Nevertheless, the group's research was used in media, courts, activist networks, and even Congress to shift public debates. Their work redirected the supposedly tragic conflict between jobs and the environment to new questions about the human costs of the destructive practice of mountaintop removal coal mining (MTR): How many cancers and birth defects is coal-derived energy worth? What Peter called my

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[3] Petcoke is a co-product that results from refining crude oil from the Canadian tar sands. It was stored in locations on the south side of Chicago before being transported for domestic and international use for energy generation and other industrial applications.

"theology of invisibility" was simply my attempt to speak back to him, in a theoretical register, what I had observed of Restoring Eden's work. While stuck in traffic, I had said, "It's like you guys are making visible what these coal companies are trying to keep invisible, and by doing so you're trying to make the love of an invisible God visible." After dinner at Eli's, Peter confirmed that this "theology of invisibility" inspired his slogan that evening about the need for clipboards and how collecting empirical data was a precondition for just action.

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My task in this chapter on methodology is to explain both how this iterative, responsive process that took place during my fieldwork encapsulates my ethnographically informed moral theology and why I think it can inform moral theologians' use of qualitative research methods in general. Rather than simply state my methods, I instead develop a normative argument about the use and meanings of ethnographic methods in Christian ethics based on an analysis of my fieldwork in dialogue with Scripture, theology, and theology's ethnographic turn.[4] In the process, I describe the Restoring Eden projects, analyze how they made the question of research method a site of practical reasoning, develop a "witness methodology" and distinguish it from other approaches, and, finally, give an account of the particular methods I used for this study. I pursued this

[4] Though I do not in this chapter directly rebut the argument against ethnography in Christian theology and ethics, Christian Scharen and Aana Marie Vigen, two leading scholars in theology's ethnographic turn, have done so in "Critiques of the Use of Social Science in Theology and Ethics," in *Ethnography as Christian Theology and Ethics*, eds. Christian Scharen and Aana Marie Vigen (New York: Continuum, 2011), 47-57. As my framework resonates closely with the trajectory established by Karl Barth, there could also be an additional argument against ethnography as simply a new form of natural theology or apologetics, both of which Barth rejected. Are we not at risk of confusing human witnesses with the Revealer and Witness, thus projecting our own thoughts, hopes, and desires into the clouds and calling it and worshipping it as God? I argue further on in this chapter that while this is one possible outcome of using qualitative methods in theology, it is not the only outcome; I maintain that it can be avoided with the aid of practices of self-critique and by maintaining a distinction, always liable to collapse and confusion, between creaturely witnesses and the Light of Revelation, Jesus Christ, the Author and Witness. Adapting a traditional formula, one could say that just as tradition and reason (and, some add, experience), serve as sources of theological knowledge, are to be normed by revelation, so also is our ethnographic attention to human speech and action to be normed by the God who is revealed in Jesus Christ and the Spirit as the God who is for us and for our salvation.

unconventional approach because I studied a series of studies; research methods were both an object of my field research and a recurring matter for reflection and deliberation about that research and how it should factor into a normative project in moral theology. The fieldwork itself provided me with the resources to understand both why I discerned that fieldwork was necessary for my project and how an analysis of my fieldwork could inform the construction of normative arguments in moral theology.

My normative argument is that moral theologians should conceive of ethnography as witnessing witnesses to aid and multiply witnesses. This clunky phrase hinges on three moments: Theologians (1) respond to God's call to bear witness to God's Word and work in the world; "ethnographic" theologians attend not only to Scripture and tradition but also (2) to other creatures' speech and action, which are themselves products of and witnesses to God's Word and work in the world. Ethnographic theologians bear witness to this creaturely witness through ethnographic methods such as participant observation, interviews, and document analysis. In doing so they (3) further enable faithful, loving, and hopeful speech and action in time. Through analysis of my fieldwork, I will show how this witness methodology contrasts with two other ways of understanding the production of knowledge and its use in shaping human life, the purveyors of which I call "revealers" and "skeptics": "Revealers" wrest more from qualitative research than is creaturely possible, while "skeptics" fail to know the world enough to act faithfully and lovingly within it.[5] A witness method, by contrast, is appropriate to time-bound, earthbound human creatures called to act here and now. If "revealers" produce idolatrous knowledge and "skeptics" doubt, Restoring Eden's citizen science projects demonstrate that

[5] The temptation of skeptics is undertheorized in Christian ethics. While I am making my own contribution to epistemology by naming three types—revealers, skeptics, and witnesses—this schema could be brought into conversation with other ways of distinguishing types, such as positivism-interpretivism or objectivism-subjectivism.

"witnesses" seek instead to produce forms of knowledge that aid and multiply witnesses to God's creative and salvific work in the world. These same general categories can be applied to understanding the use of ethnographic methods by theologians and Christian ethicists. Since ethnographic methods can be used in revelatory, skeptical, or testimonial ways, I argue in support of the latter: Moral theologians ought to use ethnographic methods to aid watchers—those whose seeing is socially delegitimized—in becoming witnesses.[6] In short, my examination of Restoring Eden's citizen science studies helps to clarify methodological matters in moral theology in general.[7]

I pursue this argument and develop this witness methodology, first, by providing a case description of the Restoring Eden projects and, second, by examining how and why Restoring Eden and their collaborators produced human knowledge about the association between community health and proximity to sites of fossil fuel extraction, storage, and burning. I argue that Restoring Eden's citizen science practice enriches the methodology of ethnographic theology by inviting us to see method as a site of practical reasoning, an instance where those called into responsibility reflect on a state of affairs and deliberate over what is to be done. Restoring Eden reasoned about the who, how, and why of producing knowledge in ruined places. In so doing, they produced neither the kind of knowledge rightly critiqued as an idolatrous view from nowhere nor the kind of doubt that impedes action and upholds the status quo. Building on this analysis of Restoring Eden's practice, I argue that theologians might use ethnographic methods in Christian

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[6] Though this will be addressed further on in the chapter, it suffices to note that "watchers" are those whose testimony of the senses does not count in public deliberation and is often dismissed as non-authoritative, "anecdotal" knowledge; "witnesses" are those whose testimony counts in public deliberation.

[7] Throughout this study, I use the term "citizen science" because it was Restoring Eden's preferred way of describing their work and is the generic term for the involvement of non-professional scientists in the work of science. However, it is a contested term, and scholars have used various terms to name popular, democratizing forms of science, such as popular epidemiology, civic science, street science, democratic science, and political science. While I use the term "citizen science," I nevertheless redefine the term "citizen" to mean not primarily a "non-scientist" but to qualify a form of science that focuses on membership in a community, particularly the work of re-membering dis-membered creatures.

ethics to support a witness methodology. Ethnographic methods are like other ways of knowing: They require us to consider how knowers and the knowledge we produce gain authority and condition action.

Throughout this chapter, my focus is methodology understood broadly to encompass the relations between what social researchers often distinguish as ontology, epistemology, and methodology: what is, what we know, and how we seek to add to what we know. "Methodology," as I engage it here, includes reflection on the whole process of producing knowledge. Ethnographic theologians produce "creaturely" knowledge of the world as God's creation. This knowledge—as both product of action and call to action—is produced at contingent moments in time, within social milieus, and in particular places without certainty of knowledge or interpretation. "Methods" refers more narrowly to techniques for collecting data, such as participant observation and document analysis. Though I engage matters of epistemology and ontology, I do so in support of the overall argument in favor of incorporating qualitative research methods into a testimonial methodology.

I. The Restoring Eden Project: A Narrative Description of the Case

The small, evangelical creation care organization Restoring Eden was the pivotal actor in producing the first primary data on the community health effects of mountaintop removal coal mining in Central Appalachia. Their efforts helped change the terms of public debate. From 2011 to 2014, they organized Christian college student volunteers to spend their spring breaks training for and administering a door-to-door health survey in the hollers of West Virginia, Kentucky, and Virginia. Prior to publication of their findings in peer-reviewed health journals, the public debate over this landscape-altering form of coal mining was locked in a duel between those defending the mountains, dubbed "environmentalists," and those championing the economy. Peter, the

Pentecostal minister and charismatic founder of Restoring Eden, was by no means the first to find the environment-vs-economy narrative untenable. He explained to me that prior to the ascendancy of strip mining and its flowering into mountaintop removal mining, that is, back when mining involved workers digging tunnels into the mountain to bring coal to the surface, coalfield residents could be "both pro-mountain and pro-coal." But once mining came to mean blowing off the tops of mountains with explosives, pushing the debris into valleys with massive earth-movers, scraping off the newly exposed coal seams like the fruit in a layered cake, and then repeating the process to reach the next seam, etc., the moral calculus settled into a "tragic" either-or decision: Either you're pro-mountain or you're pro-coal. "People had to choose one or the other."[8]

As Peter tells the story, Restoring Eden stumbled into community health science in Appalachia in part because the human costs of mining never fit these terms of debate. A few years earlier Peter, not from the region, was invited by a Catholic priest to join an interfaith witness tour.[9] They flew over mountaintop removal sites and listened to coalfield residents recount experiences of illness, toxic tap water, loss of place, and failure to be heard by decision-makers. Peter quickly realized that mountaintop removal was "the secret room in the basement that nobody knows horrible things are happening in."[10] He also met people like Bo Webb, a coalfield resident whose wife was dying of lung cancer though she had never smoked, and the local group Christians for the Mountains, which sought "to witness to the young generation, because we want them to take upon themselves this challenge to bring justice and healing to these

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[8] Fieldnotes, 10/8/17.

[9] In 2009, after Peter's cancer metastasized and he was told he had six months to live, he largely dissolved Restoring Eden as an organization. After his treatments seemed to be working, he took up the projects in Appalachia in part because they were "one-off" projects that he could plan and execute from year to year, and he hoped to continue them each year so long as he was healthy enough to do so.

[10] Unless stated otherwise, the following quotations are from an interview with Peter Illyn, 7/3/16.

mountains."[11] So in 2010, with their help, Restoring Eden organized "Appalachia Witness Tours," which were Peter's way to reorient the alternative spring break service trip model around his goal to provide young Christians an experience in which they might discover their calling to actively care for the creation God loves.

Mountains meant a lot to Peter. His own conversion from pastoral ministry to creation care organizing took place in the Cascades Mountains, where he resolved to "speak what I think is true about the places I know and love." After a decade of pastoring in Oregon, in 1989 Peter found himself questioning the "authenticity" of the Christianity he had first embraced as a hitchhiker during his teenage years. So, having recently bought some llamas as stand-ins for camels during his church's Christmas pageant that year, he set out into the Cascades for six months with two llamas, a Bible, and a biography of the Russian saint Seraphim, given to him by his Russian Orthodox mother. The defining experience that shaped his ministry happened a few months in:

> I am hiking over a mountain pass and I came into a place called Big Crow basin. … And there must have been thousands of crows, and they all took up flying at the same time. … A big flock is a murder. And this murder of crows just *gwauk gwauk*, and it was an eery night. It was a full moon night. And I set my tent up and in the middle of the night—it was a full moon night—and I heard this crying. I didn't know what it was. It was like this screaming and I got out of my tent thinking I didn't know what it was going to be. … But it was a bull elk. And this bull elk was bugling to the other, kind of signalling his dominance. And his harem of cows was around him, and I was just awed by the majesty and the primal nature of what I saw. And the next day I hiked in the forest and I came to the biggest clear-cut I had ever seen and I was reading a chapter in Proverbs every day, and it had already been three months into the trip, so I read Proverbs 31 at least two or three different times, and I got where it said "speak out for those who cannot speak for themselves," and I remember thinking on this stump, realizing that the habitat for this elk was, it took two days to walk across it. It took probably an hour to drive across it. Maybe ten minutes to fly across, or even five minutes. And that's all that was left of this habitat that used to stretch for thousands of miles. And I thought, just sitting there, I said, "Lord, who speaks for the elk? Who speaks for the forest? Who speaks for the salmon?" And by that time I was reading the Bible and finding these verses about the earth as singing

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[11] Quoted in Marty Ostrow and Terry Kay Rockefeller, *Renewal* (Fine Cut Productions, 2008), documentary film.

> praise to the creator and declaring the glory of God, and I just felt close to God and like the God I loved loved nature.

Peter emerged from the wilderness in the middle of the historic spotted owl controversy that pit environmentalists against loggers over the fate of the region's remaining old growth forests. Outraged that the place where he had just encountered God was to be logged for toilet paper, Peter redirected his ministry from the pulpit to protecting creation. Until he was convinced otherwise, he intended Restoring Eden's first slogan to be, "Stop wiping your ass with the choir of God!" It eventually became, "If you love the Creator, take care of creation."

Only later did Peter discover there was a nascent creation care movement. He came to contrast Restoring Eden's approach with the top-down approach he thought that wider movement took:

> Whereas unlike the rest of the creation care movement, where activism came because funders demanded it, for me activism came because I was fighting for places I knew and I loved. I loved those trees. I loved that mountain. And so I'd been there. I had encountered God there.

Unlike "theologically environmental and mentally environmental" creation care leaders, he says, "I was a backwoods, tree-hugging bubba. And I was ready to get in fist-fights over my little sister who was being picked on by some asshole in the bar, if that makes any sense." He thinks Restoring Eden got traction, especially among young people, because they spoke about "loving nature, knowing nature, kinship with nature, … protecting nature, the places we loved … because everybody I knew that was in activism was an activist because they had this connection in their soul with nature that they couldn't deny, and they spoke up."

This is why he physically took students to Appalachia to observe, pray, listen, read Scripture, and serve in a beautiful place devastated by coal mining: He hoped the experience itself would catalyze for them, as it had for him, a lifelong connection between love of God and active love of nature. During one of the tours that first year, Peter met with Dr. Michael Hendryx, a

public health researcher at West Virginia University, who, after he heard residents like Bo Webb ask whether their poor health was related to their proximity to MTR mining, had begun to examine whether there was indeed a link. Peter asked him about the research on the community health effects of mountaintop removal but was shocked to learn that, in spite of the cries of sick residents, nobody had ever collected primary data to measure the health effects. Michael speculated that there were probably many reasons for this, not least of which were a lack of funding, presumption among colleagues about the sources of health disparities in rural Appalachia, and, perhaps most significantly, the coal industry's reputation for intimidating those who get in their way. Michael himself had just begun to draw some attention for his analysis of secondary data that suggested an association between mountaintop removal and poor community health that needed further study. He said more research at the granular level, using primary data, would help parse out the strength of the association. So Peter, mulling over how he might retool the witness tour model around such a task, asked, "On a scale of one to ten, if you had a group of Christian college students gathering data, how valuable would that be?" Immediately Michael replied, "a twelve!"

The conversation birthed their collaborative effort to adapt the witness tour model to fill the gap in scientific knowledge about the human costs of coal. They turned their witness tours into what Peter now calls "citizen science as restorative truth-telling."[12] Peter says the model brings the concepts of witness and observation together, for "witness is a different kind of observation: You're not only gathering the data, but the students themselves also become

[12] Fieldnotes, 7/8/18. Restoring Eden borrowed the concept of "restorative truth-telling," which I explore in chapters three and four, from the Equal Justice Initiative after visit EJI in 2018. EJI uses this phrase to describe its historical investigation into lynchings in America, which is part of their "Community Memory" project.

witnesses."[13] Going door-to-door filling out health surveys, they heard stories they couldn't unhear and saw things they couldn't unsee, like families living next to mines and mine waste sites. Since 2011, the model brought hundreds of college students to Appalachia, provided data for a handful of articles published in peer-reviewed health journals, and catalyzed a new way for journalists, politicians, and lawyers to narrate the moral calculus of coal.[14]

Restoring Eden's citizen science model also brought the ire of the coal industry. The data Restoring Eden and Christians for the Mountains produced and Michael analyzed and published struck a nerve. The coal industry and their allies were swift to hit back through the courts, the media, their own well-funded research institute, and even the U.S. Congress, where a pro-coal Congressman and Baptist Sunday School teacher attacked the epistemic authority of Michael, who'd been invited to give public testimony, saying, "I've seen fifth grade science projects that were more scientific than this!"[15] But the terms of the public debate had already started to turn.

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[13] Fieldnotes, 7/1/19.

[14] Michael Hendryx, "Personal and Family Health in Rural Areas of Kentucky With and Without Mountaintop Coal Mining," *The Journal of Rural Healt*h 29, no. 1 (2013): 1-10; Michael Hendryx, Leah Wolfe, Juhua Luo, and Bo Webb, "Self-Reported Cancer Rates in Two Rural Areas of West Virginia with and Without Mountaintop Coal Mining," *Journal of Community Health* 37, no. 2 (2012): 320-327; Michael Hendryx and Juhua Luo, "An Examination of the Effects of Mountaintop Removal Coal Mining on Respiratory Symptoms and COPD Using Propensity Scores," *International Journal of Environmental Health Research* 25, no. 3 (2015): 265-276.

[15] *H.R. 1644 (Mooney), To amend the Surface Mining Control and Reclamation Act of 1977 to ensure transparency in the development of environmental regulations, and for other purposes, Before the Subcommittee on Energy and Mineral Resources*, 114th Cong. (May 14, 2015) (Statement of Representative John Fleming), [h…w].youtube.com/watch?v=iNaOsilGUOg. Jason Bostic, Vice President of the West Virginia Coal Association, said of the research,"It's an injustice to everyone involved and to the science itself to present this data as though it's worthy of some conclusion. … If anything, the involvement of the coal industry helps offset what would otherwise be worse health defects from poverty, isolation and lack of access to preventative medicine. We're the ones providing health benefits and wellness plans to our employees and their dependents. Take us away and see how it goes." Quoted in Travis Donovan, "Mountaintop Removal Mining Birth Defects: New Study Suggests Controversial Coal Operations Linked To Adverse Health Effects," *Huffington Post*, June 27, 2011, [h…w].huffingtonpost.com/2011/06/27/mountaintop-removal-coal-mining-birth-defects_n_885172.html. A top law firm representing the coal industry argued that Michael's studies have "failed to account for consanguinity," that is inbreeding, "one of the most prominent sources of birth defects." See Ken Ward, Jr., "Mountaintop removal and birth defects: Just what are the coal industry's lawyers talking about?," *Charleston Gazette-Mail*, July 11, 2011, [h…]://blogs.wvgazette.com/coaltattoo/2011/07/11/mountaintop-

An environment-vs-economy narrative began to give way to an empirically informed public debate about the human costs of mountaintop removal. Is coal worth babies born with debilitating heart defects? Is it worth cancer? So long as these kinds of costs remained publicly invisible, the coal industry and its allies could justify all manner of extractive methods in the name of economic benefits. But once they became visible in numbers, charts, and graphs, the industry's grip on the public narrative started to slip.[16]

I call these the Restoring Eden projects because while they were a collaboration between diverse groups and individuals, Restoring Eden organized the creation care groups, student volunteers, residents, activists, and health scientists.[17] They integrated into these projects multiple goals, including creating an experience for young Christians to discover their call to creation care, acquiring valuable data with very limited funding, filling the knowledge gap about the community health effects of living near MTR sites, and providing anti-MTR groups with scientific backing for their struggle against MTR. In Peter's estimation, the projects used science

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removal-and-birth-defects-just-what-are-the-coalindustrys-lawyers-talking-about/. Researchers at the ARIES Institute at Virginia Tech, funded by the coal industry, have picked apart Michael's studies without disproving any of them, and even sometimes found higher rates of illness than Michael found. However, rather than call for caution, they have consistently called for more research. "The industry-backed work -- from the University of Pittsburgh, Ohio State and Virginia Tech -- has recommended more caution in drawing too close a link between health problems and mining. And authors of the ARIES papers have called for more research that looks at the type and amount of mining, and tries to quantify pollutants and identify potential exposure routes, and factors out other potential causes -- work that Hendryx and other researchers have already done or are in the process of doing." Ken Ward Jr., "Coal-backed research takes on mining health studies," *Charleston Gazette-Mail*, April 20, 2013, [h…w].wvgazettemail.com/News/201304200057. Finally, one coal company took a FOIA dispute to the West Virginia Supreme Court to try to force West Virginia University to turn over thousands of Michael's documents to the company; see Linda Harris, "Highland Mining, WVU to argue FOIA case," *The State Journal*, February 27, 2015, [h…w].statejournal.com/story/28222033/highland-mining-wvu-to-argue-foia-case.

[16] For evidence of this shift, see the report *The Coal Mine Next Door: How the US Government's Deregulation of Mountaintop Removal Threatens Public Health* (Human Rights Watch, December 2018), [h…w].hrw.org/report/2018/12/10/coal-mine-next-door/how-us-governments-deregulation-mountaintop-removal-threatens.

[17] Michael Hendryx affirmed this in an interview on 6/28/16.

and environmental organizing in order to love God, neighbor, and creation.[18] And if, in the process, they successfully reigned in a fossil fuel industry operating beyond the bounds of any moral or theological license, then all the better. If you asked Peter why he organizes these trips, he'd tell you that it was primarily in order to expose the young volunteers to the stories of those bearing the human costs of coal and to create the conditions in which they too could be converted in a devastated place—as he was—to the God who loves creation and calls us to love and protect what the Creator loves.

Building on the model's success in Central Appalachia, Restoring Eden developed further studies in Chicago in 2015 and then Birmingham beginning in 2016. In Chicago, Peter partnered with community organizations on the city's South Side to produce data about the association between community health and proximity to petcoke storage facilities that, according to residents, coincided with a rapid decline in community health. Petcoke, or petroleum coke, is the result of refining crude oil from the Canadian tar sands. It was stored in open air piles on Chicago's south side while awaiting shipment to domestic and international markets to be used for energy production and other industrial applications. I learned of Restoring Eden's citizen science initiatives at this time and volunteered to help translate the health survey into Spanish. The published study, which showed residence near petcoke storage to be a factor in poor health, immediately preceded the Koch-owned company's decision to move the petcoke piles.[19]

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[18] And in that order. A line Peter used to use at Christian rock festivals, referring to the radical environmental organization Earth First!, went like this: "You've heard of Earth First!? We're like Earth Third: We were made to love God, love people, and love creation." Bruce Barcott, "For God So Loved the World: Evangelicals and Other Faithful Preach the Green Gospel," *The Utne Reader* (Jul/Aug 2001): 51.

[19] Michael Hendryx, Jennifer Entwhistle, Emily Kenny, and Peter Illyn, "Health status among urban residents living in proximity to petroleum coke storage: a first examination," *International Journal of Environmental Health Research* 26, no. 5-6 (2016): 497-507. On Koch owned subsidiary KCBX's decision to move the petcoke piles, see, for instance, Michael Hawthorne, "Koch firm vows to eliminate Chicago petcoke piles," *Chicago Tribune*, February 19, 2015, [h…w].chicagotribune.com/news/ct-petcoke-kcbx-met-20150219-story.html.

In Birmingham, Restoring Eden partnered with environmental justice organizations to develop a study to examine whether there was a link between poor community health and proximity to two coal plants in the African-American neighborhoods comprising North Birmingham. As in Appalachia, the project directly opposed efforts by coal industry personnel to suppress knowledge of the plants' human health costs. Individuals from the coal company, their law firm, and a politician were charged in a bribery scheme to this effect. I began my participant-observation with Restoring Eden in 2016, when I volunteered as a co-organizer and strategist of the Birmingham project. Because of Peter's declining health and a series of other contextual factors, such as the election of President Trump and the COVID-19 pandemic, the project was not completed before Peter died of cancer in December 2020.

II. Environmental Phronesis and Restoring Eden's Practical Methodology

Restoring Eden practices a distinctive form of science that troubles conventional notions of knowledge production and demonstrates how empirical research can become a form of witness. The Restoring Eden case speaks to broader debates about how to understand the interrelations between knowledge, authority, and action, and how methodology is the point where they are coordinated and contested. Restoring Eden discerned the existential—not abstract—significance of knowledge in devastated places as a matter of Christian witness. For them, methodology was a practical problem, a problem in need of practical reasoning. It mattered to them, and to those struggling to live in coal's sacrifice zones, who produces environmental knowledge, how, and why. I analyze the case here to demonstrate that practices of scientific description are an urgent site of moral reflection and deliberation over how to love God, neighbors, and creation.

Restoring Eden submitted method to the logic of practical reasoning. When I asked Peter how these projects came about, he started with his testimony and the series of faith crises that led

to his calling into creation care ministry. He recounted his strategy to speak truth about places he knew and loved, and to enable others to do the same. He told me about his realization, when first encountering MTR, that coal companies' social license to practice MTR depended on keeping its excesses secret. He and his collaborators eventually arrived at a citizen science method to try to make these visible and thus reign them in. When asked why he turned to citizen science, Peter gave an account of what moral theologian Oliver O'Donovan calls "Christian practical reasoning." [20] This is the moral reasoning of someone called by God into responsible agency and who, by coordinating reflection on a world ("what is going on?") and deliberation toward a moment of action ("what is to be done?"), resolves a thinking process with action in place and time. In practical reasoning, the element of creaturely contingency is definitive. Practical reasoning takes place in a creaturely context where knowledge about the world remains defeasible. "The knowledge of the world on which practical reason turns is always contested knowledge, not agreed," notes O'Donovan, which is why "disputes about the world mark all our moral thinking this side of the vision of God."[21] Understood thus, description is an essential aspect of reasoning about action. In a context where a lack of knowledge inhibited action, Restoring Eden generated environmental knowledge to try to open up public deliberation and enable environmental action.

More than an object of my attention in this study, practical reasoning also defines this as a study in moral theology. In this, I echo O'Donovan that attention to practical reasoning is what distinguishes moral theology from other theological subdisciplines.[22] Moral theology is an aid to

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[20] O'Donovan, *Self, World, and Time*, 31-33, 89.

[21] Ibid., 30.

[22] According to O'Donovan, attention to practical reasoning is what distinguishes moral from dogmatic theology without severing their necessary relation and proper vis-à-vis. It may also be what distinguishes moral from practical theology insofar as the former attends to action, and its modes of reasoning, and the latter stands in some determinative relationship to the concept of a practice. See, for

and reflection on moral thinking, teaching, and actions that bear witness to the self-revealing God. Its goal, in other words, should be to aid practical reasoners summoned as agents in response to God's call to reflect well on what is going on in the world and develop the ability to discern what is to be done.

More specifically, my attention to Peter's practical reasoning in this chapter, and that of other participants in the Restoring Eden projects throughout the dissertation, is a contribution to ecotheology and ethics. Willis Jenkins rightly argued that environmental ethics ought to foreground "environmental practical reason."[23] Rather than succumb to "the cosmological temptation" to simply critique and tweak worldviews to make them more ecologically enlightened, Jenkins challenged environmental ethicists to examine and promote practical strategies for making nature matter for Christian moral experience.[24] "We best serve our practical initiatives," Jenkins argued, not by having experts tinker with worldviews and concepts but "by

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instance, the definition of practical theology given by John Swinton and Harriett Mowatt: "Practical Theology is critical, theological reflection on the practices of the Church as they interact with the practices of the world, with a view to ensuring and enabling faithful participation in God's redemptive practices in, and for the world." John Swinton and Harriet Mowat, *Practical Theology and Qualitative Research*, 2nd ed. (London: SCM Press, 2016), 7.

[23] Willis Jenkins, *Ecologies of Grace: Environmental Ethics and Christian Theology* (New York: Oxford University Press, 2008), 33.

[24] Ibid., 59. According to Jenkins, work in ecotheology and environmental ethics has been divided by two approaches, both of which are inadequate. On the one hand, pragmatist approaches pretend to evade the question of culture, including social and religious pluralism and the need for cultural transformation, through their appeals to neutral scientific facts and adaptive management practices. This technocratic approach employs a fixed account of nature, its scientific representatives, and a universal need for humanity to adapt to changing ecologies to cut through and relativize human difference in pursuit of effective action. On the other hand, the cosmological approach that predominates among religious studies scholars focuses almost exclusively on retooling cultural worldviews with ecologically attuned concepts so as to result in better ecological practices. Both pragmatist and cosmological approaches privilege an elite class of scholars and practitioners who are taken to be the primary agents of environmental response. Without rejecting the insights of these approaches—Jenkins affirms that adaptive practices and cultural transformation are both necessary—Jenkins nevertheless calls for scholars to attend primarily to the ways in which actual communities draw on and adapt their moral resources in response to unprecedented environmental problems. For these arguments, see Willis Jenkins, *The Future of Ethics: Sustainability, Social Justice, and Religious Creativity* (Washington, DC: Georgetown University Press, 2013), 67-106, 149-189.

letting the problems themselves, the wounds of the earth, do the work of agitating."[25] In other words, ecologically enlightened ethicists are not necessarily the primary agents of practical reasoning about environmental action; rather, the primary agents are those who are so agitated by the wounds of the earth that they receive these wounds as a call from God to which they must respond. As O'Donovan stated, reflecting on Proverbs, the created world "has the resources to call us," and this call is really "God's call [that] reaches us only *through* the created world … as we are participators in it."[26] Restoring Eden practiced this kind of attention to the earth's wounds, coupled with participation in the created world, as a means of listening for the Creator's call. Their methodology—their way of coordinating knowledge, authority, and action—invited the earth's wounds to agitate people into responsibility. They took young Christians into the mountains in hopes that the wounds of a destroyed habitat might mediate the Creator's call to care. Restoring Eden's practices suggest that ethicists ought to examine environmental knowledge production as an essential aspect of environmental practical reasoning. They demonstrate that the limits and opportunities for environmental action are inescapably linked to what we can know—experientially, empirically, theologically—about environmental problems.

The wounds calling human communities into urgent, existential pursuits of environmental wisdom are not difficult to find. Environmental wisdom, or "environmental *phronesis*," is practical reasoning done well. In the midst of intersecting social and ecological crises today, there are countless wounds of the earth agitating people to seek environmental *phronesis*. For instance, my attention to the Restoring Eden projects is a way to think through a much larger set of issues around natural resource extraction, the political economies that depend on resource extraction, the social and ecological costs of extractivist political economies, and

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[25] Jenkins, *Ecologies of Grace*, 235.

[26] Oliver O'Donovan, *Finding and Seeking: Ethics as Theology, Volume 2* (Grand Rapids, MI: W.B. Eerdmans Publishing Co., 2014), 100-01 (emphasis original).

wise responses to them. Though I will more closely examine the larger issue of extractivism in subsequent chapters, I locate myself and my project within this particular set of concerns because, similar to Peter's calling to creation care, my research agenda and methods also result from having been agitated by the wounds of the earth. As I recounted in the introduction, my pursuit of environmental *phronesis* began in the Peruvian Amazon in 2004, a time when free trade plans were being hatched to remap and extract the resources of a place I came to know and love. That remapping came to a head in the *Baguazo* massacre in 2009, which took place not far from where I had lived. It resulted from a standoff between indigenous groups and Peru's president, the former seeking to protect their lands from extractive industries and the latter hitching national economic advancement to natural resource extraction. For many Peruvians, it marked a shift from an era of political violence to one of socio-environmental conflicts. I soon learned that this shift also resonated across the globe, wherever extractive industries, often in tandem with powerful states, were pushing into new frontiers with what one commentator has called "unconventional" methods in a "race for what's left."[27] Using a set of concepts that I will elaborate in the rest of this dissertation, I can specify that the wounds agitating my study are extractivism's environmental sacrifice zones—the particular places where lands and people bear a disproportionate amount of our natural resource-based political economy's harms.[28] It is sufficient here to note that this language of sacrifice signals an excess mediated by the "wounds of the earth" that accompany,

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[27] Michael T. Klare, *The Race for What's Left: The Global Scramble for the World's Last Resources* (New York: Metropolitan Books, 2012).

[28] "Environmental sacrifice zone" is an environmental justice concept that names places and peoples that disproportionately bear the brunt of the environmental harms that result from economic and other forms of production. It is a place "offered up for exploitation in the name of profit, progress, and technological advancement." Chris Hedges and Joe Sacco, *Days of Destruction, Days of Revolt* (New York: Nation Books, 2012), xi. According to Steve Lerner, sacrifice zones are "where residents are exposed to disproportionately elevated levels of hazardous chemicals," and "where a dangerous and sometimes lethal brand of racial and economic discrimination persists." Steve Lerner, *Sacrifice Zones: The Front Lines of Toxic Chemical Exposure in the United States* (Cambridge, MA: MIT Press, 2010), 2.

nay constitute, modern natural resource extraction and the political-economic order increasingly dependent upon it.

As one called to be and bear witness to the God whose love of creatures is revealed most definitively in Jesus Christ, I am in pursuit of Christian environmental *phronesis* at a time of expanding, intensifying, and multiplying sacrifice zones. How are Christians to be and bear witness to the God of Jesus Christ in the midst of an extractivist political economy that promises abundance and prosperity so long as you make peace with its human and otherkind sacrifices?[29] While this is the macro way of framing my study, my ethnographic approach proceeds by way of attending closely to the micro context of the Restoring Eden projects as they developed in response to the invisibilized costs of coal and oil extraction in Appalachia, Chicago, and Birmingham. My tacking back-and-forth between case and theory and my attention to the multidirectional pressures between the micro and the macro resonate with what social scientists call an extended case method.[30]

What initially drew me to study the Restoring Eden projects was the group's dogged pursuit of environmental wisdom and their drive to truthfully inhabit a world disproportionately—and far too invisibly—shaped by resource extraction and the sacrifices undergirding it. However, it was not only their pursuit that drew me; it was also the fact that their search resulted in innovative ways of gathering as witnesses in coal's sacrifice zones. Understanding how the Restoring Eden projects gathered community health science into a form of witness requires understanding how Restoring Eden's practice questions the way description

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[29] 'Otherkind' signifies non-human, earthly creatures. It is my preferred phrase for what is sometimes called nature, the non-human world, the more-than-human world, etc. I borrow it specifically from Cynthia Moe-Lobeda, "Climate Debt, White Privilege, and Christian Ethics as Political Theology," in *Common Goods: Economy, Ecology, and Political Theology*, eds. Melanie Johnson-DeBaufre, Catherine Keller, and Elias Ortega-Aponte (New York: Fordham University Press, 2015), 286-306.

[30] See, for instance, Michael Burawoy, "The Extended Case Method," *Sociological Theory* 16, no. 1 (March 1998): 4-33.

and normativity are commonly divided between science and ethics. Scientists are expected to factually describe the world; ethicists evaluate actions within it. However, Restoring Eden not only used science to describe a state of affairs in the world so as to enable action. Their use of science was itself the result of a reasoning process about how to fit action to a particular moment in time. The social license that coal companies require to practice MTR is mediated not only by the court of public opinion but also by the courts of law, regulation, and policy. Whereas the individual stories of cancer, contaminated water, and loss Peter had heard from affected persons—what scientists call "anecdotal evidence"—might hold some limited sway in the court of public opinion, they lacked authority in these other courts. Restoring Eden discerned that by collecting anecdotes in large numbers and then quantifying, mapping, and visualizing them, they could operationalize the love of creation by linking it to the epistemic authority of science. Numbers, charts, and graphs showing associations between things are the coin of the realm in data-driven decision-making. That the coal industry funded and publicized its own knowledge about coal and its effects does not negate the significance of Restoring Eden's data, even if it is evidence that "facts" cannot be left to speak for themselves. However, absent the data, there is no real public debate to be had, no public or legal deliberation about how to weigh and measure the human costs of coal when coming to judgment on the issue. The slogan "You can't count what you haven't measured, so sometimes justice begins with a clipboard" communicates this. It says that scientific research is itself an action, the result of a train of practical reasoning.

At the same time that scientific research is itself an action resulting from a train of practical reasoning, it is also the precondition of further action and a formative activity that shapes its practitioners. Because it describes a state of affairs, environmental knowledge production establishes and shapes the knowledge context in which future actions might be taken. As the Restoring Eden projects demonstrate, its formative power can also be oriented toward

particular goals. In Restoring Eden's case, for instance, this involved preparing student volunteers to humanize their interactions with participating households at the door, listening to them and even sometimes praying with them as they shared about the difficulties they and their families lived with. Restoring Eden hoped that these experiences would shape the volunteers to deepen their love of God, neighbors, and creation. For these reasons I argue that methodology should be seen as a site of practical reasoning: Restoring Eden's citizen science method was an outcome of reasoning about inhibited action, a stage in ongoing reasoning about action, and a way of forming knowers for responsibility in a contingent world.

This way of thinking about methods relates also to political action. In their development of "citizen science as restorative truth-telling," Restoring Eden turned methodology into a practical matter whereby they coordinated knowledge and authority to bear on contingent judgment in time. The judges in courts of public life and opinion—you and me—are not unlike the judges or juries in a courtroom who, because they were not eyewitnesses to an event, must hear and evaluate the testimonies of eyewitnesses. They must discern witnesses' trustworthiness and weigh up the credibility of their testimony to arrive at just judgments fitted to reality. At a time when countless chemicals are introduced to human bodies and food chains through an ever-expanding array of products and technologies, the scientific "expert witness" has become an essential, everyday figure in the courtroom. The expert witness takes the stand armed not with eyewitness testimony but with the command of an authoritative body of knowledge that aids the judge or jury in coming to just judgments. Public judgments on environmental and health matters increasingly rely on empirical evidence. At a time when coal mining's social license is mediated by public judgments, Restoring Eden produced knowledge as a condition for coming to judgment. They discerned that while science rarely proves anything beyond doubt, it can discover and

measure enough about the efficient causal associations between things to shift the burden of persuasion and thus enable deliberation over environmental matters.

In Restoring Eden's way of producing knowledge, the moral, theological, and empirical aspects do not compete; rather, they rise and fall together. With the goal of loving God's threatened creatures, Restoring Eden made them the objects of scientific investigation. They threaded together the moral and theological authority of Christian revelation with the epistemic and public authority of empirical science. For them, loving mountains, loving their inhabitants, and loving the Lord meant loving the truth, for the true costs of coal—dismantled mountains, toxic wombs, rampant cancers—remained largely invisible. "There is a math to justice," Peter says.[31] And insofar as coal's costs remain invisible, they remain external to the moral and economic calculus of coal use. Making them visible as data is a work of love. Restoring Eden devised a way to see what economists call "externalities" as unnatural and existential, as a threat to common objects of love and a call to become witnesses who respond to what they have seen with personal change and action.[32]

III. Revealers, Skeptics, and Witnesses

The power and promise of a witness methodology rests in part on its ability to avoid the epistemic dangers that characterize our current philosophical moment: an omnipotent view from nowhere, on the one hand, and a skepticism that hinders responsible action, on the other. Witness can therefore be contrasted with two other modes of knowledge production: revealer and skeptic methodologies.

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[31] Interview with Peter.

[32] I examine Restoring Eden's affective theory of action more fully in chapter two.

Twentieth-century theologians and philosophers used the concept of witness to reconceive truth-telling over against the high modern ideal of knowledge as mastery and control. Within theology, for instance, Karl Barth critiqued idolatrous forms of natural theology by calling the human back to her vocation not as a revealer but as a witness vis-à-vis the Revealer, as John the Baptist vis-à-vis the Word made flesh.[33] In Barth's account, the true agential human is fundamentally responsive to, not an originator of, revelation; her knowledge of and relations to God, self, and society are oriented by her moral encounter with God in Christ and the Spirit. Philosophers Gabriel Marcel and Emmanuel Levinas developed analogous conceptions of witness to critique philosophy's complicity in twentieth-century nationalism and genocide. Their theories of witness bespoke an attached, ethical, and intersubjective way of knowing that was grounded in concrete encounters with others and the Other. Witness, for Barth, Marcel, and Levinas, named a participatory type of knowing that circumscribed the idealized form of knowing that took hold in Europe and, with its sharp dichotomy between subject and object, enabled the reduction of human beings to something controllable, even expendable. Witness, in short, named an inseparable connection between knowledge and ethics that was intended to counter knowledge regimes that aided and abetted nationalist and other totalitarian projects.

By the time a critical theory of witness emerged in European thought, however, the Black church in America had already developed a unique tradition of interweaving theological and empirical conceptions of witness in response to an existential need to speak truth into an absurd public context. Sojourner Truth exemplifies this tradition, which began long before the twentieth century, of African-American thinkers who recognized the inhumanity licensed by modern ways of knowing. They summoned the witness in defense of more humane knowledges that might

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[33] See Karl Barth, *Witness to the Word: A Commentary on John 1*, ed. Walther Furst, trans. Geoffrey W. Bromiley (Grand Rapids, MI: W.B. Eerdmans Publishing Co., 1986).

rectify that public context. According to Rosetta Ross, African-American ecclesial practices of witness and testimony—encountering and telling about the God who "makes a way out of no way"—sustained their public actions.[34] After escaping slavery and having a religious conversion, for example, Truth joined the abolitionist circuit to go "testifying of the hope that was in her." As Truth put it, "The Lord made me a sign unto this nation, an' I go round a-testifyin', an' showin' on 'em their sins agin my people."[35] In Truth, we can see that when modernity's most unjustly objectified object spoke, the theologically and morally charged language of witness was on her lips. And her testifying bore within itself the elements of both judgment and hope closely bound to empirical observations about slavery in nineteenth-century America. Truth, together with the many who wrote their testimonies of overcoming slavery, invested witness with both empirical observation and moral and theological meaning to oppose ways of knowing that reduced human beings to controllable objects.

These harbingers of the witness vis-à-vis modernity's idealized knower critiqued the way that modern truth regimes are bound together in an idolatrous production of knowledge, and their critiques resonate with more contemporary feminist, post-structuralist, and decolonial thinkers. With respect to women in Europe or indigenous people and lands across the Atlantic, Enlightenment ways of knowing provisioned a degree of power over bodies and lands to largely European, educated men. The knower who can ascend to a view from nowhere, who in Plato's fabled myth turns from the shadowy cave to the realm of pure nature, sees the world as it is. His knowledge is immediate, as if he were simply a mirror to nature. By virtue of his vantage point,

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[34] Rosetta E. Ross, *Witnessing and Testifying: Black Women, Religion, and Civil Rights* (Minneapolis: Fortress Press, 2003).

[35] From Sojourner Truth, *The Narrative of Sojourner Truth*, quoted in Ross, *Witnessing and Testifying*, 20-21.

he is naturally qualified—elected by nature—to lead the others, even without their consultation. This epistemology is well theorized.[36] I need not rehearse its critiques any further here.

I name this way of knowing a "revealer methodology." It knows too much. It thus produces idols and injustices. Its signature sin is pride, a failure to know as an embodied human creature of time and place. It tries to extort more from scientific methods or thought procedures than they can give. It manifests an overdetermined doctrine of election: A certain class of knowers is elected—by virtue of their social location, their rationality, or perhaps their use of a theory, procedure, or tool—to acquire authoritative knowledge and therefore to lead. Human revealers lay claim to knowing too much about God and the world. They know what is "really" going on. In their estimation, public and democratic deliberations only derail right action. Whether in the negative sense of unmasking epiphenomena to reveal the real phenomenon underneath or in the positive sense of mirroring nature with facts, revealers elicit not trust but idolatry. In the case of MTR, this approach is taken by the agents of industry and government who determine what degree of human suffering and environmental harm is permissible for a greater good, such as energy provision and the nation's economic development.

Yet the Restoring Eden case suggests a complementary need to contrast the concept of witness with an undertheorized way of knowing, one which knows too little, and which I call a "skeptic methodology." The coal industry's efforts to conceal mountaintop removal and its externalized costs point toward the existential stakes of what some scholars call "agnotology"—the study of ignorance and how and why it is produced.[37] Agnotologists point to the tobacco

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[36] See, for instance, Bruno Latour, *Politics of Nature: How to Bring the Sciences into Democracy* (Cambridge, MA: Harvard University Press, 2004) and Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminist Studies* 14, no. 3 (1988): 575-99.

[37] I am indebted to Jon Kara Shields for this insight.

industry executive's admission that "doubt is our product."[38] Skeptics are "merchants of doubt."[39] Regardless of intention, whether to conceal or to acknowledge the limits of human knowing, the result of a skeptic method is the same: a lack of knowledge that gives license to a multitude of sins. A skeptic methodology imagines a stingy, distant God who refrains from communicating moral authority through creatures. Its signature sin is sloth, a failure to actively know the world as creation, or to act within it as creatures called into responsibility. Whether genuine or merely expedient, skeptics maintain an impossibly high standard for knowledge, discrediting any knowledge that falls short of certainty—potentially most everything—as not worthy of being called knowledge at all. At least, it is not the kind of knowledge that people ought to act on. Knowing too little, skeptics elicit not wisdom but doubt. And their doubt maintains the status quo. They fail the call of Wisdom to know and act in the world as it is.[40]

Coal industry supporters often use a skeptic method. For instance, during a congressional hearing, Republican Representative John Fleming looked down from the dais at Michael, the lead researcher who designed the Restoring Eden study and then analyzed and published the data. After unsuccessfully trying to poke holes in the study's methodology, Rep. Fleming took off his glasses to deliver the final blow, "Sir," he said, "I've seen fifth grade science projects that were more scientific than this!" Michael, a leading scholar in his field, started in on a defense only to be cut off, "I'm sorry, sir, but I have the time. The time is mine," Rep. Fleming asserted. "My basic point here is, you want us to set policy and damage jobs, to take away job opportunities

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[38] David Michaels, *Doubt Is Their Product: How Industry's Assault on Science Threatens Your Health* (Oxford: Oxford University Press, 2008).

[39] Naomi Oreskes and Erik M. Conway, *Merchants of Doubt: How and Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming* (New York: Bloomsbury Press, 2010), 34.

[40] Proverbs 9:1-6: 'Wisdom has built her house. … She has sent out her young women to call from the highest places in the town, "Whoever is simple, let him turn in here! … Leave your simple ways, and live, and walk in the way of insight."' For relevant commentary on this verse, see Oliver O'Donovan, *Finding and Seeking*, 100-01.

from people based on nonsense science here!?"[41] The strategy he deployed is lost on those who theorize environmental inaction as merely a denial of science. Rep. Fleming ostensibly held science in such impossibly high regard that he could dismiss any actually existing scientific conclusions as junk science.[42] The strategy casts doubt on actual science for lacking the kind of authority needed to catalyze action. It is better to simply keep things as they are, even when that means blowing up mountains over peoples' heads.

Whereas revealers produce idolatry and skeptics produce doubt, truthful witnesses elicit trust and wisdom. Witnesses reason as creatures of place and time who must trust truth-tellers and live accordingly. Creatures are not revealers. They are like John the Baptist, who came not as the Revelatory Light but to bear witness to the Light. Barth rightly reasoned that the same Light also shines in and through the "little lights of creation," for all creatures have their unique witness to bear.[43] Cutting human knowing down to a creaturely size is a humbling move. Yet to underscore its positive dimension, it must be contrasted with the skeptic who fails to see the light, the call of God, mediated by the creaturely world. O'Donovan, meditating on Proverbs, puts it thus: The created world "has the resources to call us," to invite us to learn about it, for "God's call reaches us only *through* the created world and as we are participators in it."[44] In the estimation of witnesses, the Creator is not stingy. The Author authorizes the social and natural world to mediate a moral authority capable of calling human creatures into responsibility and care, thus summoning them to answer for what they have come to know about creatures. The witness knows

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[41] *H.R. 1644, Subcommittee on Energy and Mineral Resources*.

[42] On the strategy of using this phrase "junk science" to discredit actually existing science, see Michaels, *Doubt Is Their Product*, xi-xii.

[43] Karl Barth, *Church Dogmatics* IV/3.1, ed. G.W. Bromiley and T.F. Torrance, trans. G.W. Bromiley (Peabody, MA: Hendrickson Publishers, 1961), 156.

[44] O'Donovan, *Finding and Seeking*, 100-01 (emphasis original).

in this way, vis-à-vis the Revealer, as a creature who orients scientific inquiry toward the pursuit of practical wisdom so as to live faithfully and lovingly in a world at risk.

Unlike revealers and skeptics, witnesses transcend dualisms between objective facts and subjective evaluations as they place knowledge in relation to authority and action. They do not wait for neutral, indefeasible descriptions of the world before they act. They act on descriptions they can trust. At their best, the modern sciences—that is, when they are not asked to be Science, the ideology—do this.[45] Though it remains defeasible, the sciences produce knowledge about the world with enough authority to aid deliberations over what to do. Yet scientific knowledge is but one kind of knowledge—empirical knowledge—among various ways of knowing, including moral and theological knowledge. For example, a mountain may be described scientifically as a storehouse of coal awaiting extraction or the result of shifting tectonic plates, but it may also be a home for human families, a habitat for wildlife, even host to "a choir of God."[46] How might we collectively act toward a mountain when it is many different things at once? Especially when our different descriptions of it are incommensurable? Such are the kinds of questions a witness asks. Witness that successfully matches knowledge with authority elicits trust and produces wisdom, a kind of knowledge capable of opening up deliberation and therefore conditioning a creaturely common life.

Where, in this account of witness, is the place of critique and uncertainty? This side of the eschaton, not all testimony is credible or true. It does not all bear moral authority. A testimony may be false, one's love for goods disordered, or a witness malicious. In our world, the testimony of some is deemed more authoritative than others' simply by virtue of their body or social location rather than its accordance with reality. If I am right that authority is socially and

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[45] This distinction between Science and sciences is examined in Latour, *Politics of Nature*, 9-10.

[46] As in the first slogan Peter developed for Restoring Eden after receiving his calling in a forest cut down for use as pulp for paper products: "Stop wiping your ass with the choir of God!"

naturally mediated, then there must be an essential role for critique and uncertainty.[47] Why? Because human relations and interpretations are all-too-human. They are marked by finitude and fallenness; they are creaturely and corrupted. What we think we have discovered "in nature" is so often merely a mirror of ourselves, just as what we think we have worshiped "in heaven" is so often merely a projection of ourselves. If witnesses aim to inform judgments fitted to reality, then in a world full of false and failed witnesses, critique and doubt are essential elements of true witness. The crucial point, however, is that witnesses put critique and doubt toward truthful description and wise action. In short, the authority witness bears must be understood in critical relation to the ways that credibility and legitimacy are mediated in all-too-human relations.

The anti-lynching work of Ida B. Wells shows that Restoring Eden's practice is aligned with a deeper tradition of nesting critique within the concept of witness as a form of public truth-telling that conditions just action. Wells "made witnessing lynching her life's work."[48] At great personal risk, she collected and analyzed eyewitness accounts of lynchings to disprove the white supremacist theories of lusty, violent, bestial blackness used to rationalize lynching. Hers was "a contribution to truth, an array of facts, the perusal of which it is hoped will stimulate this great American Republic to demand that justice be done though the heavens fall."[49] In her estimation, a lack of truthful witness in public allowed such false but powerful theories to justify this brutal practice. Wells responded by suffusing public discernment with empirical truths because, in her articulation of practical reasoning, "the people must know before they can act."[50] By becoming a witness to lynching in this indirect, investigative way, she "did more than perhaps anyone else to

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[47] By "naturally mediated," I mean mediated by nonhuman, otherkind creatures.

[48] Allissa V. Richardson, "Bearing Witness While Black: Theorizing African American Mobile Journalism After Ferguson," *Digital Journalism* 5, No. 6 (2017): 682.

[49] Ida B. Wells-Barnett, *Southern Horrors: Lynch Law in All Its Phases* (New York: New York Age, 1892; Project Gutenberg, 2005), preface, [h…w].gutenberg.org/files/14975/14975-h/14975-h.htm.

[50] Ibid., chapter titled, "Self-Help."

change the way the world judged the U.S. habit of lynching its black citizens."[51] When the courts of law and policy failed to uphold justice, Wells provisioned the court of public opinion with empirical knowledge to question lynching's social license. Eventually, the law courts caught up. While I examine Wells's practice in-depth in chapter four, it is sufficient to note here that she rooted just action in empirical and religious truths when she suffused public deliberations with truthful testimony about the causes of lynchings.

Feminist approaches to ethnography suggest how a Wellsian sensibility might inform ethnographic methods. Anthropologist Deborah Gordon, for instance, preferred the phrase "participant witness" to that of participant observer, because the ethnographer "is less an observer than a teller." For her, witness connotes a fitting and generative excess, a "host of conflicting associations, including informant, litigant, function of the Holy Spirit, and spectator."[52] Nancy Scheper-Hughes likewise described the ethnographer's task as "witnessing," rather than observing, because witness "is what lends our work its moral (at times its almost theological) character."[53] For Gordon and Scheper-Hughes, the concept of witness holds together tensions between knowledge and ethics, the empirical and the theological, knowers and known. Donna Haraway also made the concept integral to her feminist vision of an objectivity that "allows us to become answerable for what we learn how to see."[54] Seeing, participating, and responding. These are the key moments in a feminist vision of ethical knowledge production, particularly through ethnographic methods.

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[51] Anne P. Rice, *Witnessing Lynching: American Writers Respond* (New Brunswick, NJ: Rutgers University Press, 2003), 46.

[52] Deborah A. Gordon, "Border Work: Feminist Ethnography and the Dissemination of Literacy," in *Women Writing Culture*, eds. Ruth Behar and Deborah A. Gordon (Berkeley, CA: UC Press, 1995), 383.

[53] Nancy Scheper-Hughes, *Death Without Weeping: The Violence of Everyday Life in Brazil* (Berkeley, CA: UC Press, 1992), xii.

[54] Haraway, "Situated Knowledges," 583.

In contrast to witnesses, revealers and skeptics both remain detached from the creaturely world. The problem, according to critics of these idolatrous ways of knowing, is this detachment—either from the things known or from reality. Detached observation presupposes that knowing God and creation must involve a flight from creatureliness, an escape from the mediacy of the good world God loves, a desire to approximate to the mind and vision that is God's rather than what the tradition has called the *visio Dei*.[55] The way of *visio Dei* does not flee from the material world but entangles with it, for it trusts that all created things are at least potentially participating in gospel communication.[56] Generalized appeals to detached objectivity today, by contrast, cater to the "human desire to have the universe delivered up to understanding without being asked to make commitments." And this, according to O'Donovan, is "the allure of the value-free" and "evidence of original sin."[57] The challenge for witnesses is to see as creatures, to be creatures seeing creation in time, not seeing it from beyond or above it. Not only is human action in time marked by provisionality and contestation but so also are the descriptions of the world—the facts on the ground, so to speak—that condition human action. "Disputes about the world mark all of our moral thinking this side of the vision of God."[58] In other words, no escape from material, spatial, social, and temporal mediacy is permitted in moral thinking, for our

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[55] That the vision of God has become associated with intellectualism and a post-Cartesian conception of mind vis-à-vis body is no death knell for the visual as a pathway to knowledge of God. Seeing, after all, even in its metaphorical register, is patterned after the fleshy eyeball; sight is no path of flight from the body. Julian of Norwich is a particularly wise guide on these matters, for she rescued the pilgrimage-wayfaring metaphor from its tendency to map onto a journey of ascent from the realm of body toward the realm of mind and spirit, and in so doing creating a spiritual hierarchy that "privileges the detached life over that of human affection and its attendant disruption." Janet Martin Soskice makes this argument in *The Kindness of God: Metaphor, Gender, and Religious Language* (New York: Oxford University Press, 2007), 21.

[56] I take this to be what Thomas Aquinas means in *Summa Theologica*, I.1.3 and I.1.6 as all things being divinely revealable owing to their createdness, and what Karl Barth means in *Church Dogmatics* IV/3.1 on "The Light of Life," 38-165, as all things becoming potential witnesses to and bearers of the one Light and Word of Jesus Christ. Such an observation, however, does not dissolve the differences between them, particularly on the relation between creation and Christology.

[57] O'Donovan, *Finding and Seeking*, 79.

[58] O'Donovan, *Self, World, and Time*, 30.

creaturely personhood is constituted by such mediation and contingency. Stated positively, it is good for creatures to know and act as creatures who have been summoned by God to become witnesses to what is true and real about creation.

Regardless of idolatrous intent, detachment has nevertheless served many unjust projects. Revealers, for instance, can promote a theory of anti-blackness as if it were an objective fact of nature. And skeptics can conclude from Wells's investigations that no actions to circumscribe lynching should be taken until further research is conducted. Witnesses, however, seek to match creaturely knowledge with moral authority so as to enable public deliberations about how to fit judgments to reality. In doing so, they attend in particular to the people and other creatures on whom the burdens of idolatrous and skeptical knowing have disproportionately borne down. Witness, as here conceived, is a way of knowing appropriate to creatures—not revealers—who are called not to idleness but to an active response.

If, as we pray in the Lord's Prayer, God's is an earthbound grace, then knowledge production ought to proceed not by techniques of escape from the earth but by attending to fellow creaturely witnesses in the middle of things.[59] Restoring Eden did this in a number of places sacrificed for coal and oil. Ida B. Wells did it in the midst of a lynching epidemic. And I propose that this way of knowing ought to also guide ethnographic research in moral theology.

IV. A Witness Methodology

Restoring Eden's practice of citizen science not only testifies to the importance of making methodology a site of practical reason; it can also inform ethnographic work in theology. How

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[59] For God's grace as earthbound, see Karl Barth, *Church Dogmatics* III/3, eds. G.W. Bromiley and T.F. Torrance, trans. G.W. Bromiley and R.J. Ehrlich (Peabody, MA: Hendrickson Publishers, 1960), 432, 462. In the Lord's Prayer, we pray "Thy kingdom come, Thy will be done, on earth as it is in heaven."

might theologians also internalize knowledge production methods within Christian existence as a matter of bearing witness to God? Here, I propose that moral theologians should conceive of ethnography as witnessing witnesses to aid and multiply witnesses, and I apply this formula to my case study. With this clunky phrase I frame the limits, practices, and possibilities of ethnographic methods in moral theology. As ethnographers, neither we nor those we study are revealers, nor do we produce revelation. However, as those called to bear witness in speech and action to the Revealer, we are surrounded by a cloud of witnesses who might aid that task if only we can pay attention. To flesh this out I return to the question posed at the beginning about how to understand the process by which "my theology of invisibility" inspired Peter's slogan about the need for clipboards as a precondition for just action.

"You can't count what you haven't measured, so sometimes justice begins with a clipboard."

When Peter spun this slogan from what he called my "theology of invisibility"—that is, my attempt to speak back to him in a theoretical register what I had observed of Restoring Eden's citizen science projects in coal's sacrifice zones—it clarified something about my role as the ethnographer. It was my reflection on the practice of science they developed to fill a knowledge gap between an experience of environmental injustice and a range of strategies for effectively addressing it. Restoring Eden thereafter used the slogan to recruit volunteers, explain their model to residents, and build a network of Birmingham project supporters. Because experiences of environmental injustice fail to count—that is, fail to matter—in the courts of law, public opinion, or politics until they have been measured and visualized in charts and graphs, clipboards and health surveys are a precondition for effective environmental action. And effective action to "love, serve, and protect God's creation" is Restoring Eden's mission.

How might my role in advancing Restoring Eden's work be understood? Leading figures in ethnographic theology and ethics point to the witness concept. Aana Marie Vigen and Christian Scharen describe ethnography as an intersubjective way of knowing that is built on the recognition that both researchers and human subjects are on the same plane as witnesses to truth.[60] The witness concept is thus an alternative to uncritical views of the relation between researcher and subject. For Todd Whitmore, ethnographic fieldwork is a source of witness for theological reflection. Ethnographic theology "turns thick description to evangelistic purpose … to witness to each other as theologians as we have been witnessed to in the field."[61] Luke Bretherton conceptualizes ethnography as an aid to moral witness. He advocates moving from description and interpretation of practices to constructive judgment on practices in order to aid "faithful witness" in the world. In his account, moral reasoning about faithful action is aided not by attending to abstract judgments but to particular practical reasoners in history.[62] Willis Jenkins similarly identifies the scholar's task as aiding environmental witness and practical reasoning: The ethicist's task is to participate in and observe reform projects that bear cruciform responsibility for the world's unprecedented problems and to put them in text in hopes of sowing "seeds of new witness."[63]

Synthesizing these formulations with the concepts of witness and methodology drawn from my fieldwork, I propose that moral theologians conceive of themselves as witnesses to God's work—in Christ and the Spirit—who attend to witnesses, primarily the witness of

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[60] Christian Scharen and Aana Marie Vigen, "What is Ethnography?" in *Ethnography as Christian Theology and Ethics*, edited by Christian Scharen and Aana Marie Vigen (New York, NY: Continuum International Publishing Group, 2011), 22-23.

[61] Todd D. Whitmore, *Imitating Christ in Magwi: An Anthropological Theology* (New York: T&T Clark, 2019), 5.

[62] Luke Bretherton, "Coming to Judgment: Methodological Reflections on the Relationship Between Ecclesiology, Ethnography, and Political Theory," *Modern Theology* 28, no. 2 (April 2012): 190.

[63] Jenkins, *Ecologies*, 227.

Scripture and the cloud of witnesses past and present, in order to assist the Christian community to bear witness in speech and action to the Triune Lord at this time and place. In this account, the theologian is a witness who attends to witnesses in order to aid and multiply witnesses. Ethnographic methods are particularly well-suited to the creaturely, contingent elements of bearing witness, for both researchers and the researched are enmeshed in particular places, times, and social milieux.

A testimonial methodology of this sort reflects John's gospel account by adapting his threefold testimonial method. John the Evangelist records at least two exemplars of witness: the last witness to Christ's coming and the first witness to Christ's rising. The former is John the Baptist, who himself "was not the light, but came to bear witness about the light, that all might believe through him."[64] But if John the Baptist is the primary witness to Christ the Messiah of Israel, the Evangelist holds up Mary Magdalene as the primary witness to the risen Christ, the Lord of life. She is the one who, in a place of death and despair, is called into agency by the resurrected Lord who redeems her vision and entrusts to her the task of bearing witness to the other disciples that death is defeated and the new creation inaugurated.[65] In her, the socially delegitimized watcher becomes the divinely appointed witness to God's new work.[66] John the Evangelist, who witnesses these witnesses, puts them and Jesus—the Witness-Revealer, Anthropos-Logos, the one who has come "to bear witness to the truth"—to text in order to put truthful testimony in service of growing the economy of witnesses.[67] While the Evangelist

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[64] John 1:8.

[65] The tradition has rightly called Mary Magdalene "the apostle to the apostles."

[66] Sandra Schneiders, "Encountering and Proclaiming the Risen Jesus," in *The Strength of Her Witness: Jesus Christ in the Global Voices of Women*, ed. Elizabeth A. Johnson (Maryknoll, NY: Orbis Books, 2016), 4. See also Robert G. Maccini, *Her Testimony is True: Women as Witnesses According to John*, JSNTSup 125 (Sheffield: Sheffield Academic Press, 1996).

[67] John 18:37; 21:24. Note: I take no stance here on whether the author of this Gospel, John the Evangelist, is an individual named John or a collective Johannine community.

recognizes the unrepresentable excess of the Christ event—"the world itself could not contain the books"—he nevertheless sees it sufficient to represent in text these particulars "so that you may believe that Jesus is the Christ, the Son of God, and that by believing you may have life in his name."[68] The Evangelist witnesses witnesses in order to grow the economy of witnesses to Jesus Christ as the Messiah of Israel and the Lord of creation.

First, moral theologians are called to be witnesses. We are like John the Baptist, who himself was not the Revealer but came to bear witness to that Light that shines in and through the creaturely lights all around us. We are called to be witnesses not only in the sense of confessing Christ as Lord but also in the moral and empirical senses of attaching to, participating in, and closely observing the creaturely truths and lights around us. The existence of such witnesses are a condition for coming to just political judgments and thus building a creaturely common life. As an ethnographic theologian, my research with Restoring Eden is my response to God's call to bear witness to the reality that the world is God's beloved creation. Since first encountering the impacts of extractive industry in the Peruvian Amazon, I have learned over time that extractive industries stand at the intersection of social and ecological crises, and I have been in pursuit of faithful environmental *phronesis*, trying to understand how to wisely respond to extractivist threats to God's creatures, human and otherkind.

Second, ethnographers attend to witnesses as "research objects," which is to say, witnesses are the subjects to which we give our ethnographic attention.[69] Yet, for theologians,

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[68] John 20:31; 21:25.

[69] To call a witness a research "object" is to chasten this concept, for these objects are subjects in their own right. This is key to Barth's insight regarding the distinction between a witness and the Revealer. For the witness, the thing known is not thereby an object but remains a subject. Witness is a "speaking about," not a "speaking for." It is a knowledge that involves movement toward a person. Barth, *Witness to the Word*, 52: "Witness is truly and in the best sense speaking *about* a subject, describing it exactly and fully, pointing to it, confirming and repeating it, and all in such a way that the subject remains itself and can speak for itself, that it is not in any way absorbed in human speech or shouted down and overpowered by it.

witnesses are a complex and at least twofold "research object." They encompass at once human beings and the Triune Lord. They are both creaturely and divine, both human words and divine Word. For wherever human testimony, or creaturely testimony more broadly, is true, there is the Johannine "Spirit of Truth" at work creating, and making Christ present. Where there is true human agency, God is at work. "Where the Spirit of the Lord is, there is freedom."[70]

But, one might ask, how does an ethnographer know where to look for God at work in history? How does this differ from the revealer method, which pretends to an immediate knowledge of the nature of things or of God's work in the world?[71] I recognize the temptation to make ethnography a revealer methodology. Nevertheless, hermeneutical judgments are necessary: How should I interpret what I see and hear? As judgments, they remain contingent, fallible, and revisable. Yet, with the aid of theory and biblical testimony, as one Bible scholar exhorts, we can and must "become practiced at testifying about what the Spirit is doing in the lives of others."[72] The God at work in creation is the One who elected Israel, became incarnate in Jesus, and raises up witnesses in the Spirit. While this God works among saints and sinners alike—among faithful and failed witnesses—it is God's character to raise up those whose ability to bear authoritative witness has been socially proscribed. For instance, John the Evangelist holds up Mary Magdalene as an exemplary witness. Though it was customary at that time to proscribe the testimony of women, and thus exclude them from contributing to moral and public judgment, Jesus authorized

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Only where we have supreme concern both to be as close to the subject as possible, and yet to keep at a distance so that it may speak for itself, do we have *martyria*" (emphasis original).

[70] 2 Corinthians 3:17.

[71] A revealer method can support various claims about where God is at work in the world, such as in the church, the oppressed, human reason, nations, social movements, or the natural world.

[72] Stephen E. Fowl, *Engaging Scripture: A Model for Theological Interpretation* (Malden: Blackwell, 1998), 117.

Mary as the first apostle to bear witness to the gospel hope of resurrection.[73] It is characteristic of God to authorize socially unauthorized witnesses, those whose testimony revealers receive with skepticism.[74]

There is no theological warrant to cut off this line of reasoning at the species border. In God's economy, a herd of elk, a mountain, or a valley of clear-cut tree stumps might also take their place as witnesses summoned to call human beings into responsibility, especially when their freedom to be more than a resource for human projects is under threat.

All witnesses—whether Johns, Marys, or nonhuman creatures—find their moral and epistemic authority in the call to participate, by the work of the Spirit, in the economy of witness to the Christ, particularly as this authority contests that of the earthly economies propped up by revealers and skeptics. I will argue in subsequent chapters that an extractivist economy is exactly of this sort. It requires those who can reveal which peoples and lands must naturally bear the costs

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[73] Schneiders, "Encountering and Proclaiming," 4.

[74] Having noted this epistemological privileging of incredible witnesses, in the Evangelist's conception, the witness of the Baptist need not negate that of Mary Magdalene, or vice versa. The Baptist's socially authorized witness, signaled by his need to repeatedly refuse to be taken as a revealer, is continuous with that of Mary's socially unauthorized witness, which by the conventions of the time would have been received with skepticism. Yet both pointed with divine authority, albeit in different ways and from different social, temporal, and spatial locations, to Jesus, the Revealer. These two types of witness—the socially authorized and unauthorized—have not often been held together. For instance, Barth reflected much of the Western theological tradition when he discovered in John the Baptist a prototype of the theologian as witness. Peter, Paul, Augustine, Thomas, Calvin—they were all Johns; their witness did not have to struggle against the grain of how credibility was socially mediated, at least not with respect to gender roles. (This is not to suggest that these figures did not have to struggle against other forms of socially mediated authority. One example is the Apostle Peter, a mere fisherman.) They are "fathers" of the church, and when appeals are made to "the tradition," these are the figures most likely to be in view. The temptation I am naming here consists of confusing socially ascribed legitimacy with socially mediated divine authority; it is a failure to distinguish between them. Conversely, there is a temptation among some to interpret the disruption that is Mary's witness as license to dismiss, discredit, or denounce Johns: If theirs is not Mary's liberating vision in the throes of despair, then they cannot be bearers of gospel. Mary's testimony, in such construals, gains its moral and epistemic authority by virtue of its social proscription: The one whose testimony is received by the powerful with skepticism is made a revealer. The challenge is to resist making either Johns or Marys, by virtue of their social location, into revealers. However, neither are they worthy of skepticism. Insofar as Mary gives witness to this one, Jesus Christ, whose self-testimony was also proscribed—"and his own received him not" (John 1:11, KJV)—then it will disrupt, shaking the moral, religious, and epistemic structures of the day at their very foundations.

for “our” abundance, and it puts skeptics to work dismissing any witnesses who might raise a credible testimony against it.

In order to attend to witnesses, ethnographers must risk provisional judgments about when and where God is at work in history, as well as when and where to look for wisdom. When we fail to make such judgments, we give skepticism, and that to which it gives license, divine sanction. But when those judgments become programmatic, defined sociologically with respect to some social group or identity, then human witness is made to be something like revelation. The task of ethnographers, in contrast, is to construct archives of living testimony. This is how ethnographic theologians should approach interviews, conversations, participation, and the collection of documents; they are like units of testimony gathered together into an expanding archive that informs what the ethnographer represents in text. In my work, among the cloud of witnesses—the mothers and fathers of the church through time—I include those who are entangled with the Restoring Eden projects in Birmingham, Chicago, and Appalachia. Through ethnographic attention to and participation in the Restoring Eden Project, I construct an archive of living testimony that I draw on, together with the testimony of Scripture and theological traditions, to speak about the Triune Lord and human response to this Lord at a time when our common life is ordered by a natural resource economy that routinely sacrifices creatures and proscribes their witness.

This second aspect of a testimonial methodology is the appropriate place to specify the particular methods used in this study to construct this archive of living testimony. As I stated earlier, I use an extended case method to study the Restoring Eden projects.[75] Through close attention to this particular case, I also examine the wider phenomenon of natural resource

[75] My case study is not of Restoring Eden *per se* but of the Restoring Eden projects that arose in response to the invisibilized human and ecological costs of extracting, storing, refining, and burning fossil fuels in West Virginia, Virginia, Kentucky, Chicago, and Birmingham.

extractivism and the historical and theoretical frameworks scholars have developed to understand and address its excesses. I ask specifically whether Restoring Eden's unique way of integrating faith, science, and environmental action in partnership with people of diverse and no faiths might inform scholarly understanding of and collective responses to natural resource extractivism today. This case, furthermore, is not chosen for its representativeness. Even if Restoring Eden shares elements with other creation care initiatives, environmental activists, and citizen science practitioners, their projects do not necessarily represent some larger movement. Rather, I think the Restoring Eden case presents a generative crisis for generic and typological approaches to studying ecotheology and ethics.[76] I draw attention to the particular ways this one small organization borrowed and bent concepts and practices from multiple quarters in a theologically sophisticated process of practical reasoning about faithful environmental action in particular times and places.[77] The generalizable potential of my findings stems not from the case's representativeness but from what I judge to be its generative way of fitting action to a particular moment in time and place; its generalizability lies in its creative power to generate Christian environmental action that I think effectively and faithfully witnesses to the divine economy of creation and salvation while deeply enmeshed in a death-dealing natural resource economy. This is because the Restoring Eden projects operated as if resources were not natural and environmental sacrifices were not necessary; rather, these were at odds with the ways God relates to and reveals Godself in moving toward creation.

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[76] This approach to ethnography as affording a generative crisis to theory aimed at repairing it with attention to *phronesis* in order to better inform action comes from Bretherton, "Coming to Judgment," 167-196. A typological approach can be seen in Willis Jenkins's early work, *Ecologies of Grace*, or Joseph D. Witt, *Religion and Resistance in Appalachia: Faith and the Fight against Mountaintop Removal Coal Mining* (Lexington: University Press of Kentucky, 2016).

[77] Since Peter's cancer returned, Restoring Eden, once an organization with a handful of staff and a modest budget, was, by the time of the citizen science studies, merely Peter and a loose association of friends, volunteers, and activists loyal to him and his creatively unorthodox approach to creation care.

The particular research methods I used to study the Restoring Eden projects are many. They included participant observation (or, following Deborah Gordon, what I prefer to call "participant witness"), in-depth interviews, collection and analysis of documents and other materials, and archival methods of tracking and analyzing references to the group's research in public fora, such as courts, scholarly publications, activist networks, governmental agencies, Congress, print and digital news media, blogs, and social media. I began studying Restoring Eden in summer 2016 after they had completed the projects in Appalachia and Chicago and as they were planning the Birmingham study. As of writing, I am still continuing my research, even after Peter's death in December 2020, through interviews and conversations with student volunteers, co-organizers, and activists who have used the research for policy advocacy. I joined Restoring Eden in 2016 as a volunteer co-organizer and strategist for the Birmingham project.[78] In that role, I talked regularly with Peter and other project leaders by phone, made a dozen week-long visits to Birmingham, built a network of project supporters and participants, developed written materials for the project, recruited volunteers, built relationships with church leaders, raised funds, designed a website, planned events, and attended and chaired project-related meetings. I kept extensive field notes throughout these three years of fieldwork. I also conducted seven formal interviews with project leaders and student volunteers and many more informal interviews and conversations, following a protocol approved by Duke University's Institutional Review Board for human subjects research.

Third, in addition to understanding both ethnographic theologians and the research objects they study as witnesses, the final element of a witness methodology is its aim: The aim of ethnographic ethics is to aid and multiply witnesses—that is, judgments based on practical reason

[78] I served in this role until the project folded due to Peter's health and other factors, such as the COVID-19 pandemic, in 2020

in service of better, more faithful, action.[79] In Jenkins's terms, the aim is to sow "seeds of new witness."[80] A witness methodology is therefore akin to what political scientist Bent Flyvbjerg calls "phronetic research" that aims to enable practical wisdom.[81] The descriptions ethnographic theologians produce ought to, like testimony in the courtroom, open up deliberation and enable just judgment. They should never, like revealer methodologies, be used to evade deliberation or, like skeptic methodologies, infinitely defer judgment. Neither can ethnographic descriptions guarantee that just judgments will be reached. Ethnographers can aid efforts to live, act, and come to wise judgments in light of the testimony given by particular groups of people in time. That is their unique *charism*.

The particular aim of this study is to enable the church and world to generate practices and technologies for turning erstwhile watchers into witnesses. By this, I mean that citizen science—and, by extension, other democratizing forms of knowledge production—should be seen as a set of practices by which Christians can form a common life with others, human and otherwise, in our "knowledge society."[82] The point can be made by analogy to the way the risen Christ entrusted the gospel message and vision to the incredible witness Mary Magdalene: It is characteristic of God to enable and empower the witness of those whose testimony does not count in public. These proscribed witnesses are with us today; they are those whose witness is socially or even legally proscribed, who, in Donna Haraway's terms, are permitted only to "watch," never

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[79] Bretherton, "Coming to Judgment," 190.

[80] Jenkins, *Ecologies of Grace*, 227.

[81] Bent Flyvbjerg, *Making Social Science Matter: Why Social Inquiry Fails and How it can Succeed Again* (Cambridge: Cambridge University Press, 2001).

[82] For a description of our society as a "knowledge society," see Fernando Domínguez Rubio and Patrick Baert, "The *Politics of Knowledge*: An Introduction," in *Politics of Knowledge*, eds. Fernando Domínguez Rubio and Patrick Baert (New York: Routledge, 2012), 1.

to "witness" what is going on.[83] Their observations of the world lack the socially negotiated capacity to lend authority to knowledge. And if they cannot participate in producing authoritative knowledge, then neither can they contribute to processes of public judgment. One example was the "black codes" following the American civil war, which proscribed Black persons from testifying against white people in court and evaluating the trustworthiness of witness testimonies as part of a jury.[84] Is it all that different when North Birmingham residents' testimonies about the health effects of living next door to an industrial coal plant are routinely dismissed as merely anecdotal evidence that falls short of the standards for publicly authorized and legally and politically actionable testimony? I am not suggesting that anecdotal evidence somehow always bears the authority of truth, but sometimes it does. At the very least, it can become a testable hypothesis for empirical research, as it became for Restoring Eden. In their hands, citizen science was a way to enable erstwhile watchers to become witnesses. In the terms of my argument, Restoring Eden used citizen science to increase and multiply witnesses in a world where extractivism depends on proscribing it either through revealers, who claim to know too much to listen to the cries of others, or through skeptics, who claim to know too little to act.

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[83] Early experimental scientists in seventeenth-century England invented the social technology of a witnessing public. By testifying to the results of the experiments performed, this public lent social legitimacy to the facts their experiments produced. However, this reliable "public" was highly restrictive. The testimony of women and the laboring class, for instance, lent no credibility to a fact's facticity. For this reason, Haraway argues that the practices of early experimental science remade gender, class, and race relations in the process of constructing facts of nature. It's not that Man prevented Woman from witnessing, but that "men became man in the practice of modest witnessing." Drawing on the work of Elizabeth Potter, Haraway argues that the practice of experimental science split the world between those who could and those who could not reliably witness the making of a fact. Haraway concludes that "within the conventions of modest truth-telling, women might *watch* a demonstration; they could not *witness* it. … [T]he exclusion of women and laboring men was instrumental to managing a critical boundary between watching and witnessing, between who is a scientist and who is not, and between popular culture and scientific fact" (emphasis original). In short, modern scientific practice was part of the making of man the witness and his unreliable other, the marked watcher. Donna Haraway, "Modest_Witness@Second_Millennium," in *The Haraway Reader* (New York: Routledge, 2004), 227-32.

[84] Katie Geneva Cannon, *Katie's Canon: Womanism and the Soul of the Black Community* (New York: Continuum, 1995), 52.

I think Restoring Eden's citizen science projects are one fitting way to recognize that the world is filled with God's witnesses, if only we can work against demanding they become revealers or discrediting them as watchers.[85] At a time when creaturely witnesses are constantly reduced to mere watchers, generating practices that enable watchers to become witnesses is Christian work, testifying that all creatures are called to participate in God's economy. By amplifying and developing on Restoring Eden's practice, I hope to aid and multiply witnesses to the God who wraps a No to extractivism's sacrifices within a Yes to creaturely life and material existence.[86]

Conclusion

When the places we come to know and love are slated for sacrifice, it is right and good to respond with witness and testimony. The wounds of a world of creaturely witnesses reduced to mere watchers invite us to develop ways of knowing that free watchers to become witnesses to their Creator's word and work. As Restoring Eden made methodology a practical matter, a site where faithful and effective action is taken or not, so might moral theologians. Methodology is a site where description and norms, knowledge and authority, are coordinated in such a way that they result in action or failures to act. Ethnographic theologians and ethicists need not try to compel action by claiming the mantle of revelation, nor ought they fail to know the world before them.

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[85] I should note here that the concept of a "watcher" can be used to name both poles that I seek to avoid through the concept of the "witness": A watcher can be either someone whose observations lend no authority to publicly authorized facts, as in Haraway's account, or someone whose observations are detached from the relationships that constitute reality, as in the revealer, whose epistemic authority derives from self-proclaimed detachment and impartiality.

[86] The No-and-Yes schema is borrowed from Karl Barth and is meant to signify, through the use of a spatial metaphor, that God's judgment on sin (the No) is for the sake of God's gracious gift of life to creatures (the Yes). If we think of two concentric circles, divine judgment is wrapped within divine grace as the smaller circle is wrapped within a larger one.

Rather, they can trust that the Creator revealed in Christ and the Spirit has not left God's word and work to a world without witnesses. Ethnography can help us pay attention to them.

Chapter 2. Life and Death in Coal's Sacrifice Zones

They're treated as sacrificable communities, but they're not expendable people.
- Sarah

Sarah's driving me around north Birmingham in her Toyota Prius, one of her few possessions. Her large, black dog has been displaced to the back seat, clearly unhappy that I'm up front in her spot. There's an empty bowl and spoon down by my feet from a rushed breakfast. The E on the gas gauge is lit up, and there's a softball-sized orange on the dashboard right in front of me. Sarah catches me trying to wedge it under the windshield. "That's my lunch."

The back seat of her car is still doubling as a closet, at least until Sarah can find her own place to stay in Birmingham. The move from rural Tennessee wasn't as smooth as she'd hoped. But she just heard back about a room, so she's hopeful. Sarah's the real deal. She takes real risks. She has no safety net waiting to catch her if loving her neighbor doesn't pay the bills. If environmental health research doesn't work out, her fall-back plan is to dye hair at a friend's salon in Tennessee. A series of scholarships got her two post-secondary degrees, but she doesn't have the insider network to convert them into a cushy job.

The first time I met Sarah was in Birmingham the summer she took a road trip to celebrate completing her master's in environmental health. She and I met with an environmental justice activist named Jane, a white woman who had returned to Birmingham after a successful career in D.C. Jane had been blacklisted by the city's movers and shakers after she fought the coal and power companies over their dirty operation in North Birmingham. Once, over lunch, Jane had confidentially told a Black state representative, a local basketball star turned politician, about her organization's opposition to the coal companies conspiring against residents in his

district. It turns out he was secretly recording the whole conversation. He handed it over to the coal company. A federal investigation later revealed that he was on their payroll.

My most vivid memory of that meeting with Jane was Sarah getting shivers every time Jane added a new layer of coordinated conspiracy to the North Birmingham story. “Ooooh,” she’d say, and then shiver, “the evil is so dark it’s almost beautiful.”

The first time she said it, Jane’s and my eyes begged for clarification. “I studied religion in undergrad,” Sarah explained. “I’m fascinated by the grip of sin and evil.” Jane told us that her house “mysteriously” and “spontaneously” caught fire from a power surge at exactly the same time that she was fighting the power company. Curiously, hers was the only house affected. Jane left the environmental work behind. For her, the problem wasn’t sin; it was men. So she shifted her energy toward getting women elected to public office in Alabama.

“Race is just used to divide us,” Sarah says, her hands on the wheel and her eyes scanning the road. I’ve thought and read that before, but it’s different coming from Sarah. She’s a Latina from East Tennessee. I ask her to say more. She says Rev, one of the project organizers, took her on a tour of North Birmingham when she first arrived a few days ago. A Black pastor, he told her the problem in North Birmingham was environmental racism. The residents living near the two coal plants at the heart of an unfolding bribery scandal are Black and poor. Before integration, Black migrants coming to the city for work had few options apart from residential neighborhoods like these, located in pockets surrounded by heavy industry. After integration, those who could left for other neighborhoods and suburbs, and those who stayed increasingly felt abandoned in their decaying neighborhoods.

But Sarah doesn’t see it the same way as Rev. She says she gets the racial history. Even so, “It’s not about race. I’m from Tennessee. I’ve worked in Appalachia. I’ve been to Ecuador and Guatemala. I’ve heard stories about India and China and Australia. Environmental injustice is

everywhere." She goes on, "It's not about race. It's about being called and treated as expendable people, as sacrificable communities. It's about sacrificing people for a greater good. They're treated as sacrificable communities, but they're not expendable people!"[1]

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This scene from my fieldwork introduces this chapter's content. Sin. Sacrifice. Environment. Race. Gender. Politics. Power. Coal. Conspiracy. Retaliation. Justice. These themes propel all that follows. They frame this study in ecopolitical theology by the existential realities of life and death.

For Sarah, there is a fundamental conflict of descriptions taking place in North Birmingham: What is the nature of the problem? Is it race? Gender? Sin? I will examine her interpretation of environmental injustice as a kind of sacrifice within which forms of social analysis, such as race and gender analysis, are submitted to theological claims about sin and sacrifice. Sacrifice is the thread by which she weaves the Restoring Eden citizen science projects into thick theological and environmental traditions. I am thus putting into practice the method outlined in the previous chapter: I locate my development of a Christian ecopolitical theology in a contingent context, *in media res*—in the middle of things—where I attend to Christian practical reasoners in order to show the constructive theological potential of field-derived concepts. In slowing down to analyze this opening scene, and how it implicates key debates in environmental thought and practice, I seek to answer two questions. Where are we now? And how should we describe our moment in time? Examining Sarah's notion of sacrifice, Peter's theory of citizen science, and how both of them theologically thicken the concept of an environmental sacrifice zone, I will argue that we find ourselves enmeshed within rival political ecologies of sacrifice in a

[1] Fieldnotes, 3/14/19.

world where particular places, such as the Appalachian coalfields and North Birmingham, have become sites of concentrated tension and conflict between these rival ecologies.

For enmeshed creatures like us, however, it is not abundantly clear which phenomena are part of which political ecology, and neither is it clear what is right and good for Christians to do in such a world. On the one hand, the church is enmeshed with coal and the forms of life, politics, and faith it has made possible.[2] On the other hand, the church also critiques coal use, the coal industry, and the ecological significance of burning coal and points toward alternative ways of energizing life together in creation.[3] Examining this conflict between rival political ecologies, then, requires a form of ecopolitical theology that examines the intersections between talk of God, talk of politics, and talk of ecology. In the rest of this dissertation, I develop such an ecopolitical theology that is informed by analysis of my fieldwork and developed in dialogue with moral theology and critical nature-society studies. This ecopolitical theology is intended to aid the judgment of Christians who ask how they might faithfully inhabit a world characterized by multiplying, intensifying, and expanding sacrifice zones.

My method of answering the questions about "where we are" and "when we are" differ from the standard way of asking and answering questions in ecotheology. A generalized account of this standard way is as follows. It begins by citing scientific research about changing climates, bioaccumulation, species loss, and rising seas—and maybe it adds a personal anecdote—and then asks how the Christian community should respond. It then outlines a doctrine of creation, or a neighboring theological locus, from which an ethics can be derived and applied to address these

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[2] For a study of Appalachian coalfield Christianity, see Richard J. Callahan, Jr., Kathryn Lofton, and Chad E. Seales, "Allegories of Progress: Industrial Religion in the United States," *Journal of the American Academy of Religion* 78, no. 1 (March 2020): 1-39.

[3] For a study of the church's resistance to coal, see Joseph D. Witt, *Religion and Resistance in Appalachia: Faith and the Fight Against Mountaintop Removal Coal Mining* (Lexington, KY: University Press of Kentucky, 2016).

particular environmental issues.[4] This has variously been critiqued as a "blueprint" approach or a "cosmological temptation" that privileges ideal concepts, and the scholars who work with them, over the ways in which everyday Christians—often with their non-Christian neighbors—respond to the realities they face in practice.[5] In short, according to the standard approach, science raises the questions, and theological traditions of thought, critique, and practice are called upon to supply the answers. In contrast, I begin with the places where Restoring Eden worked, and then I work outward to suggest that both the realities they encountered and their responses to them resonate more broadly. In other words, both the questions and the answers emerge from particular sites of a wound, from which I extrapolate out to other sites with broadly familiar wounds.[6]

If it is accurate that the places where Restoring Eden carried out its citizen science projects are sacrifice zones where conflicts between two rival political ecologies of sacrifice are concentrated, then ecopolitical theology should concern itself with offering an interpretive aid to help Christians (and others) discern between these rival ecologies in order to live well in a world dotted with sacrifice zones. This is an approach that moves from sacrifice zones out.[7] Though my focus is sacrifice zones, where I believe that conflict is most acute, my interest is in how these particular places implicate wider dynamics far beyond them. The sacrifice zones at the heart of

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[4] See, for example, David Clough, *On Animals, Volume 1: Systematic Theology* (New York: T&T Clark, 2014), and *On Animals, Volume 2: Theological Ethics* (New York: T&T Clark, 2019); Sallie McFague, *The Body of God: An Ecological Theology* (Minneapolis: Fortress Press, 1993).

[5] Nicholas Healy and Luke Bretherton critique this approach in ecclesiology and political theology, respectively. Willis Jenkins critiques it in ecology. See Nicholas Healy, *Church, World and the Christian Life: Practical-Prophetic Ecclesiology* (Cambridge: Cambridge University Press, 2000); Luke Bretherton, "Coming to Judgment: Methodological Reflections on the Relationship Between Ecclesiology, Ethnography and Political Theory," *Modern Theology* 28.2 (April 2012): 167-96; and Willis Jenkins, *The Future of Ethics: Sustainability, Social Justice, and Religious Creativity* (Washington, DC: Georgetown University Press, 2013).

[6] For an argument in favor of beginning theology at the site of a wound, see Mary McClintock Fulkerson, *Places of Redemption: Theology for a Worldly Church* (Oxford: Oxford University Press, 2007), 12-18.

[7] It contrasts with approaches that move from abstract conceptualizations of environmental problems, such as climate change or biodiversity loss, toward particularity.

this study implicate all of modern life and contemporary forms of social and ecological order. As such, a hermeneutic developed in conversation with these particular zones holds the promise of having a much wider significance for social and creaturely life today and can be developed as an aid to judgment. This chapter's descriptive argument lays a foundation for the following two chapters, which fulfill the task outlined here by constructing a hermeneutic of sacrifice that is grounded in these geographies and is developed in conversation with Augustine's two-cities motif and critical theologies of sacrifice to provide a provisional way to interpret and thus act in a world where sacrifice zones are proliferating, intensifying, and expanding. This chapter proceeds in stages. First, I show that the concept of sacrifice is not an incidental aspect of Sarah's self-understanding but definitive of her commitment to the Restoring Eden project.

Second, I argue that the concept of sacrifice is also central to the Restoring Eden citizen science model as a whole, and is therefore a central matter of concern for this study. I examine Peter's self-described intent to use citizen science to make the "true costs of coal" visible to the public and personal to the volunteer data gatherers. Though he speaks primarily of externalities and hidden costs, I argue that Sarah's language of sacrifice is a more theologically promising way for the church to internalize externalities within the Christian life.

Third, I investigate the conceptual background to Sarah's use of the language of sacrifice by providing a genealogy and analysis of the concept of a sacrifice zone. Since no such genealogy exists in the academic literature, this both fills a lacuna in the literature and provides an analysis of this concept that Sarah carried from Appalachia to Birmingham.

Fourth, I examine the language of sacrifice as it is used, critiqued, and constructively reformulated by scholars of environmental politics to counter both an environmental politics of austerity (e.g., "make do with less") and a sacrifice-free environmental politics (e.g., "we can have it all, comfort and sustainability"). Though this literature develops a promising trajectory for

a constructive theory of environmental sacrifice, I point to its limitations and the need for a more explicitly theological engagement.

I conclude that because coal's sacrifice zones are sites of concentrated conflict between rival political ecologies of sacrifice, discerning how to faithfully, lovingly, and hopefully inhabit a world filled with sacrifice zones can be aided by an ecopolitical theology that names these rival ecologies within God's economy of creation and salvation.

I. Sarah, Sacrifice, and Neighbor Love

Sacrifice is a determinative concept Sarah uses to understand her environmental health research in West Virginia and Alabama. When Sarah told me that Appalachian and Birmingham residents were being treated as sacrificable communities, it was not an offhand comment. It was the way she regularly recruited health study volunteers from colleges and universities in and near Birmingham. Though the residents of North Birmingham are treated as "sacrificable communities," she would say, they are not "expendable people." And then she would proceed to say that participating in a community health survey is a way to treat sacrificed people as something other than expendable, that is, as a neighbor. Finally, she would invite her listeners to consider volunteering to go door-to-door to collect household health data. If that data showed higher rates of illness compared to a control community, then residents could use it to fight for change.

The importance of Sarah's sacrifice concept stems from her rise to leadership. A surprising series of developments led to Sarah becoming the Restoring Eden project manager in Birmingham. Peter was no longer able to travel beyond the Pacific Northwest after a scan in 2018 showed that his cancer was growing again and he switched treatment regimens. The project languished for a few months in a state of limbo. Prior to that point, Peter and I had spent about

eighteen months intermittently traveling to Birmingham to build relationships with individuals, churches, non-profit organizations, community organizations, and colleges that expressed interest in contributing to the project. But with Peter's unstable health and the side-effects of his long-term treatment providing only small windows for travel and mental concentration, the dates we set to begin the study were deferred multiple times. When his cancer started spreading, I thought the project would quietly fade away, our trust with stakeholders tested one time too many. But within a few months, three individuals emerged who refused to let the project dissolve and committed themselves to leading it.

Rev, a Black minister with the United Church of Christ, had moved from Atlanta to Birmingham the previous summer to develop an interfaith environmental network in the state. Rev and Peter met for the first time during Peter's final visit before his pivotal cancer scan. Hope, a young, white Birmingham native from the wealthiest part of town, had led the Restoring Eden student group at her Baptist college before leaving to pursue graduate studies in environmental policy in Indiana. Sarah was the third.

In December 2018, Rev, Sarah, Hope, and I, each one residing in a different state, began a series of weekly phone calls that eventually led to Sarah agreeing to move to Birmingham to take on the task of managing the project. Rev provided an organizational home for the project and became its public spokesperson, creating links between North Birmingham residents and wider climate activist networks. Hope put in place a financial, organizational, and logistical structure for the project, refined its design, and secured an office space. I provided theoretical continuity from the project's earlier phase under Peter's leadership and produced materials for funders, volunteers, and the website. We all raised modest funds to cover some basic costs.

That Sarah stepped into the management role was not entirely surprising. Peter often pointed to Sarah as an example of how the health studies impacted not only the communities that

needed the data but also the young people who volunteered to serve as data gatherers. She exemplified the kind of personal change he thought experiential learning could accomplish. Sarah was an undergraduate religion major at her Tennessee Baptist college when she volunteered in the spring of 2011 with Restoring Eden's first health study in West Virginia. Soon after, she began studying nursing, and she volunteered again every year thereafter. Peter eventually made her a trainer for first-time volunteers, especially those who struggled to get people to participate in the survey. Sarah would join them for a few houses, put on a thick Tennessee accent, sugar up the introductory script like sweet tea, emphasize that she was from a "Christian" college, and then start in on the questions to try to convince seemingly reluctant study participants that the questions were easy to answer. Sarah always got high participation rates, and so did the survey teams after she showed them how to do it. Encouraged by the survey, many participants would begin to tell difficult stories about their health, their concern for loved ones, or people they had lost over the years. When that happened, Restoring Eden encouraged students to follow participants' lead, and Sarah modeled for volunteers how to transition from the survey to prayer when it felt appropriate. Caring for people living near MTR sites became her vocation. After college, she interned with the Ohio Valley Environmental Coalition and then continued working with a public health scientist—beyond the Restoring Eden studies—on health research in West Virginia's MTR communities, all the while pursuing a master's in environmental health.

Sarah says that Restoring Eden taught her that doing community health research among expendable people was a powerful way to love her neighbor. For Peter, this was a defining feature of the project design, and it is what set the Restoring Eden studies apart from other forms of community-based or citizen science research. It was never merely about collecting data that might be useful for residents and activists. It was also about creating a context in which student volunteers might have what he called "epiphanies"—moments of insight about reality,

particularly about how their lives and consumption patterns affect real people and places that God creates and loves. The project, in other words, aimed to expand what it was that young Christians loved and cared for.

In Sarah's view, these moments are concentrated at the door, where surveyer and surveyed humanize one another. She calls what takes place at the doorway (or on the porch or in the yard) "co-humanistic encounters with expendable people." For her, these encounters are a good in and of themselves, providing a small opportunity to humanize a relationship otherwise defined by distance and expendability. Though the volunteer researchers might gain something from the encounter, like a moral or spiritual insight, there is also an exchange. These encounters also have the added purpose of supplying the surveyed with valuable data they or other activists can use to fight for a healthier environment. As Sarah portrays it, humanizing our relations is critical in environmental justice.

Restoring Eden holds that the kind of knowledge this form of science produces is more than empirical data; it also has the power to make neighbors. Though I examine this in a later chapter, it is sufficient to note here that while modern scientific forms of knowledge have been associated with objectivity and the dispassionate observer, both Peter and Sarah name something slightly different. The knowledge they seek to produce is empirical in character—it is intended to produce a scientific description by way of data analysis. Yet the process of gathering data from individual households is not interchangeable with gathering data from other sources, such as county health records or other large datasets, because it involves a human encounter. It is a qualitatively different method of doing quantitative research. Of significance is that both Peter and Sarah theologically frame this difference, and the encounter that anchors it, in terms of the theological concept of neighbor. On the Restoring Eden website for the Birmingham project, for instance, their "about us" page seeks to persuade skeptical residents that their approach to science

is different from that of bureaucrats, opportunist lawyers, and academics: "We're not government. We're not lawyers. We're not industry. We're not even paid. We're neighbors."[8] The scientific knowledge Restoring Eden seeks to produce is subordinated to the larger goal to transform the relations constituting sacrifice zones into neighborly ecologies.

According to Sarah, treating someone as a neighbor is the right response to that person's being treated as expendable. For her, the pertinent contrast is between a system that treats people as sacrificable and an encounter that treats them as a fellow human and neighbor, as one for whom Christ died. Treating expendable people as neighbors inverts the concept of sacrifice enshrined in the notion of a sacrifice zone. Whereas sacrifice is associated, in the first instance, with disvalue and worthlessness—with processes that render valuable persons expendable—the neighbor concept associates sacrifice with action for the sake of the other, even if that action is full of risk and its effectiveness is not guaranteed. Treating an expendable person as a neighbor, or refusing to allow oneself and one's neighbors to be treated as expendable, makes oneself vulnerable. There is the risk of failure and ineffectiveness, the risk of becoming the object of retaliation, public smear campaigns, and intimidation, or the risk that one's action will not be received as a gift but rather as pity, privilege, or poverty tourism. Though sacrificial offerings might be received and reciprocated, sacrifice guarantees neither its reception nor a return.[9]

The citizen science projects, in Sarah's estimation, should be understood as contesting a descriptive claim that is mediated by the natural resource economy that wraps Appalachia and Birmingham into a larger project: The sacrificed are not expendable persons; they are neighbors. A humanizing practice of science among the sacrificed is one way to communicate this.

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[8] The website is now defunct.

[9] Philosopher Moshe Halbertal explores these aspects of sacrifice in *On Sacrifice* (Princeton: Princeton University Press, 2012).

II. From Externalities to Sacrifices

The concept of sacrifice is not only a defining feature of Sarah's approach to the health studies; I argue that it is also the center around which Restoring Eden organizes its practice of citizen science, in general. This argument is made difficult by the fact that, in one sense, it goes against the grain of the fieldwork in order to argue that, in another sense, sacrifice is the cornerstone concept for Restoring Eden's citizen science. Though Peter does not use the language of sacrifice, and prefers instead to describe the health studies as a matter of incorporating "externalities" and "hidden costs" into Christian creation care practice, I build on Sarah's insights to argue that externalities are best conceived theologically as sacrifices (negatively understood). Conceiving them as what I later call "false sacrifices," I argue, is the most promising way to meet what Peter thinks is the greatest challenge for the church's creation care witness today, that is, "understanding the concept of externalities."[10] My argument thus proceeds by way of an intra-fieldwork critique—arguing that Sarah's concept corrects Peter's—in order to advance Peter's hope to provide the church with a way to internalize externalities as a matter of Christian witness. The most promising way to internalize externalities within Christian existence is to theorize them as (false) sacrifices to which a fitting response is true sacrifice, understood here in its nascent form in terms of neighbor-love, though this will be developed further in the following chapters. Here, however, my goal is merely to make the sacrifice zones of Appalachia and Birmingham visible as places where different political ecologies of sacrifice—that is, different socially and ecologically significant logics of sacrifice—circulate and come into conflict.

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In order to understand how Peter incorporates externalities into creation care witness, we must first understand Restoring Eden's heart-centered, conversionist approach to creation care

[10] Fieldnotes, 11/14/19.

movement-building. Restoring Eden's approach is driven by a theory of action that turns on internalizing the love that the Creator has for creatures. Creation care actions, in this view, are downstream of loving the creatures the Creator loves.

A fighter by nature, Peter tends to explain his views by way of opposition.[11] For Peter, Restoring Eden's distinctive approach is best understood by way of contrast with the wider evangelical creation care movement, typified in his mind by the Evangelical Environmental Network (EEN):

> Whereas unlike the rest of the creation care movement, where activism came because funders demanded it, for me activism came because I was fighting for places I knew and I loved. I loved those trees. I loved that mountain. And so I'd been there. I had encountered God there. Activism. I was fighting for places I loved and places I knew. And EEN and all these other groups were kind of theologically environmental and mentally environmental.[12]

In contrast to the intellectualist approach manifested by the wider movement, Peter's strategy was "to speak what I think is true about the places I know and love." Personal knowledge and love of a place are, in this account, more primary than—though in no way a substitution for—intellectual knowledge and advocacy for structural change.

According to Peter, the intellectualist and policy approach typified by EEN was beset by a number of fatal problems. One was its vulnerability to shifting partisan agendas. According to Peter, the creation care movement flourished during the Bush years, when environmental funders dedicated large amounts of money toward delivering evangelicals over to the climate movement, and, more indirectly, the Democratic Party. But that "creation care decade," as he calls it, stalled

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[11] Peter derives an extraordinary amount of meaning from his family heritage of fighters. He draws an enormous amount of personal meaning especially from the heydukes, his ancestors, who fought the Ottomans for hundreds of years from their hideouts in the mountains, and who eventually founded the Greek nation under Kolokotrónis, as well as from his grandfather, who led troops from Russia's White Army to (unsuccessfully) protect Czar Nicholas from the advancing Red Army.

[12] Unless otherwise stated, the quotations in this section are from an interview with Peter Illyn, 7/3/16.

almost as quickly as it developed. With Barack Obama's election in 2008, the money dried up as funders assumed the federal government would chart a long and progressive environmental future. (Funders did not foresee the Trump Administration's great reversal.) Funders, in other words, abandoned the movement as soon as it no longer seemed necessary and expedient for carrying out a narrow policy agenda, leaving the leading creation care organizations struggling to keep the movement going as they competed with one another for increasingly limited funds.

For Peter, not only was that approach narrowly focused on elections and policy change, which put it at the whim of fleeting partisan agendas, it also lacked heart. It was a "theological or mental environmentalism" playing a numbers game; it churned through human relationships: You call a hundred people and fifteen commit to calling their congressperson; you ask your friends to do something, and they'll do it once or twice, but then they start to feel used. The organization reports all the numbers to the funder who keeps the money coming and the mobilization going. The already-committed respond, but nobody is really converted.

According to Peter, in practice, this approach prioritizes the circulation of compelling speakers who can move through church networks and conferences and convince people that a stance on climate change policy derives from some passages of Scripture. Many creation care groups searched for public speakers with compelling stories or emerging leaders who might represent a fresh voice on creation care matters. This search for "the next savior" with a compelling message translates into expensive conferences and travel budgets and a dynamic that Peter identifies as over-promising and under-delivering. On paper, speakers can promise to reach huge numbers of churches and Christian leaders with their message. But not only does this set organizations up for under-delivering, it also makes smaller, more targeted efforts at movement-building seem insignificant by comparison. In Peter's view, this is what happened to Restoring Eden when they were passed over by funders who were attracted to the big numbers that the

intellectualist organizations promised. Restoring Eden's plans to create situations in which smaller numbers of people would reflectively encounter actual places and creatures seemed too insignificant by comparison.

In contrast to the intellectualist policy approach to creation care, Peter calls Restoring Eden's approach "cultural," meaning that it is about building a long-term movement rooted in the heart or the gut. And this requires a kind of conversion. If the intellectualist policy approach "trampled the tadpoles to get to the bullfrogs," Restoring Eden worked "to cultivate tadpoles to become bullfrogs."[13] They did things like set up tables at Christian rock festivals and colleges where they talked about

> loving nature, knowing nature, kinship with nature, … protecting nature, the places we loved … because everybody I knew that was in activism was an activist because they had this connection in their soul with nature that they couldn't deny, and they spoke up.

In addition to physically taking people "into nature" in order to know and love it, which often meant wilderness experiences, Restoring Eden also made catchy slogans to put biblical language to the love and spiritual connections people already felt toward particular places. Peter took it as a basic fact that most people already loved actual places and creatures; they simply lacked a biblical language for naming that love. That lack stemmed from the fact that, in his view, most Christians were caught between the radical environmentalists who seemed to idolize nature, on the one hand, and those who dismissed it from the realm of Christian concern, on the other. How, then, to affirm and name our love of natural places and creatures without worshiping the earth? Restoring Eden attempted to put language to it through what Peter calls "paradigm expansion." In many cases, strategic efforts at paradigm expansion are more accessible and effective than trying to enact paradigm shifts, because the former puts existing commitments toward a wider range of concerns. With reference to the radical environmental group Earth First!, for instance, a line Peter

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[13] Fieldnotes, 3/4/19.

used to use went like this: "You've heard of Earth First!? We're like Earth Third: We were made to love God, love people, and love creation."[14] Creation care has never been about loving God or neighbors any less. Rather, it is about expanding what Christian love entails.[15]

Though Peter describes his approach as "cultural," and contrasts it with the funder-driven policy approach of the evangelical climate movement led by EEN, he draws no sharp line between culture and politics, nor between kinship and activism. "Restoring Eden was always a double outlier," he says, "particularly in the creation care world: We aimed to cultivate a sense of kinship with nature and a political activism."[16] While they never eschewed policy advocacy, they merely refused to channel every problem through the public policy nexus because such an approach fancies action without conversion. Restoring Eden worked instead with a wider notion of political action that was grounded in a personal relationship with actual places and creatures. Their vision is a movement for social change that is rooted in personal conversion to the Creator who calls human creatures to care for what the Creator loves.

This overview of Restoring Eden's theory of environmental action vis-à-vis the wider creation care movement is crucial for understanding Restoring Eden's citizen science projects and how they came about in response to the human and environmental costs that are hidden by our natural resource-based political economy. While many people might intellectually recognize that there are costs for fossil fuel use that are not reflected in the price they pay for fossil fuels, do they really know what those costs are? If they knew those costs in a personal, affective way, then they might act differently toward fossil fuels.

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[14] Bruce Barcott, "For God So Loved the World: Evangelicals and Other Faithful Preach the Green Gospel," *The Utne Reader* (Jul/Aug 2001): 51.

[15] This line is also, incidentally, what Peter means by restoring Eden: It is meant to signify the Hebrew vision of *shalom* as just, peaceable, and joy-filled relations between God, human beings, and all of creation.

[16] Fieldnotes, 3/14/18.

This kind of personal knowledge catalyzed Peter's specific engagement with mountaintop removal and became the primary goal of the Restoring Eden projects. After flying over mountaintop removal sites and listening to the testimonies of coalfield residents during the interfaith witness tour Peter joined in 2007, he realized that mountaintop removal was "the secret room in the basement that nobody knows horrible things are happening in."[17] The image dramatically renders a distinction between the seeming normalcy of what happens in a theoretical "upstairs" (with, for instance, the "normal suburban family"), and the horrors that lie beneath (where the kids are kept in chains). It is one of his metaphors for describing the American fossil fuel economy: People consume energy as a normal aspect of their lives while silhouetted figures fight for survival out of view. The whole structure depends on the rest of us—in the metaphor, the suburban neighbors going about normal life—not knowing what is really happening next door. With a complementary image—which Peter intended to make into a poster—he conceptualized the element of responsibility: There is a parked car running in a driveway with an exhaust pipe stretching into the neighbor's window. If the first image dramatizes the lack of knowledge about what is happening out of view, the second represents our (the neighbor's) responsibility for what is happening next door.

Not long after the interfaith witness tour, when creation care funds were drying up and Peter's ocular melanoma had returned, Peter shifted Restoring Eden's attention to short-term, one-off events that he could pull off with little money and short windows of time. He figured that if he was going to die of cancer in 2011, he might as well accomplish something doable in 2010. So in 2010, he worked with local residents and Christian activists he met during the interfaith tour to organize the self-funded "Appalachia Witness Tours" that morphed into health study projects

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[17] Interview with Peter Illyn, 7/3/16. Footage from this event comprises part of the documentary film *Renewal* by Marty Ostrow and Terry Kay Rockefeller (Fine Cut Productions, 2008).

the following year. Through the witness tours, Peter and his partners in West Virginia reimagined the mainstay Christian college model of a spring break service trip around the goal to provide Christian college students an experience where they might be called and converted to creation care witness—as he was—in a beautiful habitat devastated by extractive industry.

When the witness tours became health study projects in 2011, their goals expanded: In addition to exposing the volunteers to "stories they couldn't unhear and sights they couldn't unsee," the projects also sought to fill the gap in scientific knowledge about the human costs of coal.[18] As I examine in later chapters, Peter began to name these projects "citizen science as restorative truth-telling," because the carrying out of the science itself became a tool for telling a true story—meaning a story that evokes a moral response—about the hidden costs of coal, thus making new forms of concerted action possible.[19] This is what Peter means by saying, "there is a math to justice": Enabling the doing of environmental justice requires morally internalizing coal's externalities, and this work is hindered by a lack of empirical knowledge. By making some of coal's true costs visible in numbers, charts, and graphs, they can be used to generate forms of power to contest mountaintop removal and re-assert the priority of neighbor love over coal use.

In this expansion of the witness tours into citizen science projects, the witness concept also expanded. Peter says the citizen science model brings the concepts of witness and observation together: "Witness is a different kind of observation. You're not only gathering the data but the students themselves also become witnesses."[20] For him, it is the lack of witnesses to coal's externalities that allows the industry to keep wasting lives and lands beyond its moral license. As he once put it, "Understanding the concept of externalities is the most important thing

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[18] Fieldnotes, 9/25/18.

[19] Fieldnotes, 7/8/18. Peter adapted the concept of "restorative truth-telling" from the Equal Justice Initiative after a visit to their headquarters that I arranged for Restoring Eden's Birmingham team in 2018. I explore this further in chapters three and four.

[20] Fieldnotes, 7/1/19.

for the church today. Externalities need to be at the heart of creation care witness."[21] This is the potential he thinks citizen science has. It can internalize the concept of externalities within a moral and theological commitment to caring for God's creation. It expands the number of witnesses who have the kind of personal knowledge of coal's externalities that might mark their practices and moral commitments for years to come.

In Restoring Eden's conception of science as truth-telling witness, the manner of collecting the data is just as important as what can be done with it. Making externalities visible, in other words, is only one of the goals of the citizen science projects. The other is the conversion of citizen scientists themselves, for whom an externality becomes a human relationship. When volunteers listen to and record the stories of people struggling to live in a place increasingly rendered uninhabitable, they begin to see and feel the weight of what it means for entire communities to bear our extractive economy's externalities. And this seeing and feeling makes further forms of witness possible. Peter puts it this way: "Once you learn to see the externalities of coal in Birmingham, then you look at your phone and you see externalities for a girl in a sweatshop in China."[22] In other words, he hopes that as the volunteers begin to see objects anew and personally know the economy they participate in more truthfully, new avenues of Christian witness will open up for them through an expansion of their existing paradigms of Christian love. In Peter's vision for the projects, conversion, personal knowledge, and action are integrated.

Does the vision bear out in practice? The testimony of Alex, a volunteer, suggests that it does. She says the projects helped her integrate heart, science, and her message about creation care.

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[21] Fieldnotes, 11/14/19.
[22] Fieldnotes, 9/29/18.

Alex led a group of volunteers from her Alabama Baptist college to participate in the Appalachia study one spring break. During the group's week in Virginia, she and her survey partner knocked on the same door twice. It was a house situated in a hollow between two encroaching mountaintop removal mine sites. The first time they knocked, a young mother answered and asked them to return another day because her two-year old son had been born with a heart defect, and she needed to hold him for his nap. When they returned and knocked a few days later, a visibly distressed, elderly woman opened the door. Alex's account is worth quoting in full.

> Good morning, ma'am, we are Christian college students conducting health surveys in your community. Would you mind if we asked you a few questions?" Her voice wavered as she responded, "I'm sorry, now is not a good time, my two-year old grandson passed away a couple days ago." She continued, explaining that he had a heart defect and when his mother put him down for a nap two days before, he never woke up. … We held her hands and prayed that our God of comfort would be her refuge during this storm, her ever-present hope in her pain.[23]

Reflecting on this experience a few months later, Alex recalls a study of secondary health data that showed a higher rate of birth defects in babies born near mountaintop removal sites.

> While I cannot jump to the conclusion that the infant's heart defect was directly correlated to his proximity to a mountaintop removal mine, I can't help but question, would the story have ended the same way had the family lived just a couple counties away, where MTR is not an issue?

As Alex recognizes, public health science is not definitive. The data requires interpretation. Public health's conclusions tend to land somewhere between correlation and causality. Nevertheless, it informs how she interprets her encounter with an "expendable person" in the mountains of Virginia. She describes the experience as having put heart into her message about creation care.

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[23] This and the following quotes are from Alex Gerrish, "When Words Grow Legs," Christians for the Mountains, accessed December 10, 2019, [h…w].christiansforthemountains.org/site/Topics/Issues/Health/Alex-Gerrish.html.

> Through the hands-on work of administering health surveys I confronted face-to-face the heartbreaking reality of real people suffering from environmental injustice seemingly beyond their control. The significance of the surveys we administered acquired new life, as I saw what firsthand health data had the potential to address. The persuasive elevator speeches I have long employed to "care for God's creation" gained a renovated fervor—a heartfelt experience to accompany the words.

Science, heart, words, and action. A moral connection between them is what Peter sought to cultivate. As Alex reflects back on her encounter with an "expendable family" in Virginia, she says it "fuels my ever-growing desire to care for God's ongoing restoration of His physical creation and those systems and people who depend upon it."

Peter often recounts Alex's story while explaining the kind of impact citizen science can have on volunteer data gatherers. Her story displays the character of conversion, knowledge, and action that lies at the heart of Restoring Eden's practice of citizen science. Citizen science provides both a way to make externalities publicly visible in charts, graphs, and numbers, and an opportunity for young Christians to internalize externalities as an integral aspect of their Christian witness.

I contend that this practice actually transforms the economic concept of externalities. Sarah is my guide here. She offers a theological interpretation of externalities, the economic relations that produce them, and the sacrifice zones in which they are concentrated. For her, the existence of sacrifice zones is an index of a theological problem deeply rooted in the economy that produces them: Wasting whole communities by wasting the land they inhabit is antithetical to the kind of love Jesus displayed and the life he lived. What is more, these sacrifices are not incidental to the economic relations that produce them. Rather, they are constitutive of those relations. A natural resource economy produces harms that must be borne—somewhere and by someone. Some people and places are offered up so that other people in other lands might flourish.

Sarah's interpretation resonates with Latin American political ecologists who theorize that an extractivist order does not exist apart from but is rather constituted by its violence and sacrifices.[24] Eduardo Gudynas argues that, as an economy that requires regularized sacrifice, extractivism is best understood as an "ecopolitical theology," and that attempts to engage it as anything other than a theological project are doomed to fail.[25] In his estimation, extractivism is not simply a political theology that joins together political and theological concepts; it is, rather, an eco-political theology because it "implies very particular ideas about Nature and about how to appropriate its resources."[26] What is more, "those who question this faith in extractivism are quickly negated, discredited, and even persecuted."[27] Maintaining an extractivist order thus requires mobilizing a set of rituals, training institutions, doctrines, texts, and punishments that normalize and rationalize extractivism as the only pathway to human abundance and a secure future, thus investing it with religious significance. It provides a promise of salvation for which other things become sacrificable objects. Sarah intimates what Gudynas makes explicit, that is, that a critique of extractivism "always entails a questioning of the beliefs that sustain it, that reach the heart of Modernity, and must therefore enter into a theological dispute."[28]

By specifying coal's externalities as sacrifices, Sarah theologically enriches the concept of externalities that Peter locates at the heart of both creation care witness in sacrificed places and Restoring Eden's model of citizen science as restorative truth-telling. An externality, according to economic theory, can be negative or positive. It is a cost or a benefit that both affects a party that did not choose to incur it and is not reflected in the cost of a product, such as coal. When Sarah

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[24] Alberto Acosta, "Maldiciones, Herejías y Otros Milagros de la Economía Extractivista," *Tabula Rasa* 24 (2016): 38. I explore this Latin American *extractivismo* theory in depth in chapter three.

[25] Eduardo Gudynas, "Teología de los Extractivismos: Introducción a Tabula Rasa No. 24," *Tabula Rasa* 24 (2016): 11-23 (English translations of this text are mine).

[26] Ibid., 13-16.

[27] Ibid., 20.

[28] Ibid., 21.

names that which motivates her, it is the negative externalities, what Peter calls "the true costs of coal," that she has in view. Particular groups of people living in particular places bear these costs, thus subsidizing through their suffering someone else's flourishing. They become sacrifices in the sense that they bear and reveal the full weight of an idolatrous economy that divides lands and lives determined for death from those elected for life.[29]

Hebrew and Christian conceptions of sacrifice, however, much like the concept of an externality, have a two-ness to them that requires a hermeneutic for contextual discernment and judgment: Some sacrifices are properly offered and received while others are not. This hermeneutic has been formulated differently in different contexts. And though I dedicate the next two chapters to a constructive formulation intended to aid Christian environmental practical reasoning, I can note here that such a hermeneutic is often operative within theories of sacrifice. One might think of Augustine's distinction between true and false sacrifices, JoAnne Terrell's between a "hermeneutic of sacrifice" and "sacramental witness," Norman Wirzba's between "genuine sacrifice" and "anti-sacrifice," or the social-scientific distinction between self-sacrificial love and scapegoating.[30] Discerning between forms of sacrifice is a theological matter in need of judgment.

Before pursuing this line of development in the next chapter, however, I pause to examine both the character of sacrifice entailed by the concept of a sacrifice zone, for which I provide a genealogy of the concept, and the status of sacrifice language in broader debates in

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[29] For sacrifice as here conceived, the matters of intentionality and agency are of lesser importance. There need not be a particular individual or group pulling the levers; it may just as well be what libertarian economists call a spontaneous form of order.

[30] See, respectively, Saint Augustine of Hippo, *The City of God*, trans. William Babcock (Hyde Park, NY: New City Press, 2012), especially X, XV.7, and XIX.24; JoAnne Marie Terrell, *Power in the Blood?: The Cross in the African American Experience* (Eugene, OR: Wipf & Stock, 1998), especially 22, 57, and 139-43; Norman Wirzba, *Food and Faith: A Theology of Eating* (New York, NJ: Cambridge University Press, 2011), 156-193; Johannes Zachhuber, "Modern Discourse on Sacrifice and its Theological Background," in *Sacrifice and Modern Thought*, eds. Julia Meszaros and Johannes Zachhuber (Oxford University Press, 2014), 12-28.

environmental studies. The claim thus far is that sacrifice is central for understanding Sarah's commitment to citizen science and for understanding the Restoring Eden projects as a whole. What we see in the sacrifice zones of Appalachia and Birmingham, furthermore, are rival political ecologies of sacrifice, that is, rival ways of ordering social and ecological relations. The inchoate hermeneutic thus far associates negative sacrifices with treating persons and places as expendable and positive sacrifices as forms of neighbor-love in more-than-human creaturely ecologies. The former concept of environmental sacrifice—rendering persons and places expendable—has a rich history of development. To that I now turn.

III. A Genealogy of the Concept of a Sacrifice Zone

Sarah says she moved her community health research from Central Appalachia to Birmingham because both places were being sacrificed for a greater good. In her mind, these two places were linked together by a sacrificial logic that rendered them both expendable for coal extraction and production. She applied the Appalachian anti-mountaintop removal movement's concept of a sacrifice zone to a handful of neighborhoods in North Birmingham.

But where did this concept of a sacrifice zone come from? Scholars who use the phrase "sacrifice zone" tend to either cite short, diverse, and conflicting accounts of its origin and semantic range or use the term as if it were a fixed concept. Did it originate from the Soviets in relation to nuclear development? From a Reagan-era official's offhand remark about indigenous lands and nuclear testing in the 1980s? From a 1973 federal report on energy development in the American West? In the absence of a critical genealogy of this concept in the academic literature, I provide one here that is built on archival research and analysis of news media and academic scholarship. This genealogy illuminates the background history of Sarah's language by describing the material history of a concept that first emerged at a particular moment in American history,

was then developed by diverse groups in different geopolitical contexts with respect to a range of issues, and finally became a critical environmental justice concept deployed globally to unite ecological and social analysis. My purpose, therefore, is not just to identify the phrase's origin but to also show how the concept of a sacrifice zone emerged, developed, and was enriched through encounters with diverse populations in diverse geographic contexts over time.

The questions this genealogy helps me answer are: What does the concept's emergence and development tell us about the places called sacrifice zones? In particular, what does it tell us about the places where Restoring Eden carried out the citizen science projects in Central Appalachia and Birmingham?

I proceed in three parts. First, I provide a history of the concept as it moved from Appalachia to the American West as a critical energy concept in the 1970s and then returned to Appalachia as an environmental justice concept in the late 1990s. Second, I identify and analyze a number of meanings and analytical objects that enriched the concept over time and across space. Third, I use the concept to theorize sacrifice zones as sites of conflict between rival ecologies of sacrifice.

As a concept that originated in livestock management and conservation, its transference and development within the spheres of environmental and energy issues points toward both its adaptability and stability across time and space. Since the mid-1990s, environmental scholars and movements have preferred the phrase "sacrifice zone." Prior to that, however, the more common phrase was "sacrifice area." Also, the concept is often qualified as a "national sacrifice area," an "environmental sacrifice zone," or an "energy sacrifice zone." These qualifiers specify either what is being sacrificed or what a place is being sacrificed for. Lastly, it has often been associated with a number of companion concepts, including an "energy colony," "economic colony," "resource curse," or "national energy zone." However, given that the core concept is maintained

across various qualifiers, I will trace the emergence of the more general concept of a sacrifice zone.

The current range of meanings of the sacrifice zone concept in environmental thought originated in its transference from the realm of livestock and pasture management, where it developed as a conservation concept, to that of energy and environmental issues, where, in the aftermath of the 1973 oil crisis, it became a critical concept. It thus changed from a conservation concept about techniques for balancing economic and ecological factors in land and livestock management to a critical concept for opposing the human and environmental costs of development, consumerism, militarism, or other generalized and abstract collective pursuits.

By the early 1970s, land managers and animal agriculturalists regularly referred to those places destroyed by livestock as "sacrifice areas." Observing that the vegetation around water sources was often destroyed by heavy grazing, trampling, or dusting over, bureaucratic land managers in the American West called these places "sacrifice areas" in a 1970 report.[31] Lacking in vibrant vegetation, during periods of rain these areas turned to mud; during droughts to dust. Yet, because successful livestock operations required green pastures, the sacrifice area concept developed to index different practices for different plots of land: Some pastureland should be permanently destroyed to allow other pastureland to remain verdant over the long term. For instance, one Bureau of Indian Affairs report on the resource potential of the Standing Rock Reservation in 1973 specified that sacrifice areas "reflect[ed] a conservation concept, not a

[31] *Proposed livestock grazing management program for the Shoshone grazing area*, prepared by the Department of the Interior, Bureau of Land Management, Idaho State Office (Boise, ID: 1970), 3-17.

maximum utilization concept."[32] The goal, in short, was to intervene; not to try to eliminate sacrifices, but to concentrate them into as small an area as possible.

Observations about the existence of sacrifice zones and the desirability of minimizing them were often paired with technological or managerial solutions to concentrate the damage in small areas or, as in the case of animal waste, send it elsewhere. Also, in 1970, for instance, in the British *Farm & Country* journal, one scholar defined a "sacrifice area" as a "geographic location" for concentrating waste, where animal farmers disposed of effluent. But because of more intensive animal agricultural practices and worsening river pollution, and because increasingly closer proximity of farms to human settlements made on-site sacrifice areas more difficult to maintain, he argued that an industrial solution for removing effluent was needed.[33] Both land managers and animal agriculturalists paired the concept of a sacrifice area with a set of scientific, technological, and managerial tools that could be used to either make them as small as possible or move them to off-site locations. Though a technological intervention could be as simple as a fence, it nevertheless required intervention by a human agent whose task was to ensure the good of the whole livestock enterprise. Like conservation principles in general, the concept of a sacrifice area thus originated in bureaucratic, technoscientific forms of managing nature, particularly land and animals, for long-term economic purposes.

The concept maintains this meaning in livestock and pasture management today. For instance, contemporary horse owners and animal agriculturalists use the phrases "sacrifice area," "sacrifice lot," and "sacrifice paddock" interchangeably to refer to a small area of land, usually a penned-in area or paddock, where they can concentrate ecological damage from weather, waste,

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[32] *The Standing Rock Reservation—its resources & development potential*, prepared for the Standing Rock tribe by the Planning Support Group of the Bureau of Indian Affairs in cooperation with the Aberdeen area office and the Standing Rock Agency (Billings, MT: 1973), 62.

[33] Tony Collier, "The liabilities of liquids," *Farm & Country* 225, no. 4198 (October 1, 1970): 19.

trampling, and overgrazing, thus protecting the rest of the pasture. It is also still a concept for science-driven farming. According to the Livestock and Poultry Environmental Learning Community (LPELC), for instance, whose mission is to provide "access to the nation's best science-based resources" for combining environmental stewardship with animal agriculture, "sacrifice areas protect pastures." Germaine to the associations I am theorizing in this dissertation, LPELC uses salvation language to define the concept: "It is called a sacrifice area because you are giving up land that could be used as a pasture in order to protect the remaining pasture area, which is saved."[34] Some land is offered up to be destroyed so that other land might be saved.

To summarize, a sacrifice area was originally—and still is—a concept and practice for scientifically managing land and animals to balance economic productivity and ecological sustainability, thus minimizing ecological damage and protecting pastures—really the entire livestock operation as a whole—from "irrational" animal behavior. Because animals are incapable of regulating their behavior in a way that would conserve the whole enterprise's sustainability through time, managers and agriculturalists intervene to separate protected lands from sacrificed lands and therefore ensure the long-term good of the whole enterprise. A rational agent divides sacrificed land from saved land by a fence.

This livestock concept became an energy concept at a particular moment in history—in 1973—when an oil crisis exacerbated a complex confluence of forces summarized by the rallying cry, "Don't Appalachianize the West."[35] By that time, the U.S. had become dependent on foreign, largely Middle Eastern oil to meet its rising national energy demand. Yet independent oil

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[34] "Exercise or Sacrifice Lots for Horses," Livestock and Poultry Environmental Learning Community, accessed March 23, 2020, [h…]://lpelc.org/exercise-or-sacrifice-lots-for-horses/.

[35] Colman McCarthy, "Who's Who in Appalachia: Back to Coal, Back to Work," *The Atlantic Monthly* (July 1976).

producers and their evangelical allies had long opposed that reliance, especially as it enriched East Coast liberal oil elites, bolstered liberal Protestant cosmopolitanism, and threatened Israel's divinely appointed role in premillennial salvation history.[36] This pre-existing movement for American energy independence gained steam when Middle Eastern petrostates launched an oil embargo against Western nations in October 1973 to try to end their support for Israel during the Yom Kippur War. Middle Eastern petrostates weaponized their oil resources, converting oil power into political-economic power to remake the international order. Within weeks, U.S. President Richard Nixon announced "Project Independence," an initiative that combined energy conservation and self-sufficiency principles to expand nuclear plants and coal strip-mines into Western areas largely inhabited by ranchers, agriculturalists, and Native Americans.[37] The American energy industry, already well established on the East, West, and Gulf coasts, thus increasingly moved into the western interior. Coal and nuclear companies took their industrial technologies to Colorado, Nevada, Utah, and the Great Plains (Montana, South Dakota, and Wyoming), where ranchers, Native Americans, and environmentalists slowly found common cause in rejecting their "Appalachianization." "Don't Appalachianize the West" became "a rallying cry that [sought] to prevent the energy companies from ravaging with strip mines such coal-rich states as Montana and Wyoming," writing them off as "national sacrifice areas" where "little of the vast mineral wealth [is] returned to the citizens."[38] The oil crisis thus intensified an emergent confrontation between industrial and agricultural economies wherein a livestock concept became an energy concept.

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[36] See Darren Dochuk, *Anointed With Oil: How Christianity and Crude Made Modern America* (New York: Basic Books, 2019).

[37] The series of events that would culminate in the creation of a Department of Energy began with Nixon's response to the oil embargo.

[38] McCarthy, "Who's Who in Appalachia," 69.

By the time of the oil embargo in late 1973, the seeds of that confrontation had already been sown. Responding to increased demand for low-sulfur coal in the 1960s, coal companies began shifting from labor-intensive underground mining to strip-mining methods in Appalachia, where these new, technologically sophisticated surface mining methods generated intense opposition from environmentalists, agrarians, labor organizers, and residents.[39] These groups coalesced into an anti-strip-mining movement that gained national attention. In particular, it drew attention to the fact that Appalachia's environment was being destroyed to supply coal for the nation's energy and industrial needs even as its inhabitants remained economically poor. In what has sometimes been theorized in the Global South as a "resource curse," residents' land was destroyed for valuable resources, but they were left poor. As the West was also rich in low-sulfur coal near the surface, particularly in Colorado, Wyoming, and Montana, coal companies proposed to use similar stripping methods to exploit coal there. It triggered a public debate at state and federal levels about whether the West would become the next Appalachia or, if such a fate was avoidable, what might be done differently.

A report entitled *Rehabilitation Potential of Western Coal Lands*, by the federal government's National Research Council, was the first document to make sacrifice areas an energy concept. The study committee began its work in January 1973, before the oil crisis, and published its report a year later, after the oil embargo was put in place.[40] It acknowledged that

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[39] Though coal miner unions initially opposed strip-mining because of how it replaced labor with machines, after a steady increase of strip-miners in the unions, they eventually shifted toward supporting industry against environmentalists and new regulations. See Chad Montrie, "'We Mean to Stop Them, One Way or Another': Coal, Power, and the Fight against Strip Mining in Appalachia," in *Mountains of Injustice: Social and Environmental Justice in Appalachia*, eds. Michele Morrone and Geoffrey L. Buckley (Athens, OH: Ohio University Press, 2011), 81-98. Also, low-sulfur became extremely valuable after the passage of the Clean Air Act, because low-sulfur coal had better emissions properties than other forms of coal.

[40] *Rehabilitation Potential of Western Coal Lands: A Report to the Energy Policy Project of the Ford Foundation*, National Research Council (U.S.) Study Committee on the Potential for Rehabilitating

because "the controversy over surface mining has been centered mainly in the eastern United States, but now it is shifting to the American West," there was a need for "rehabilitation techniques" to "prevent a repetition of the Appalachian experience in the western coal lands."[41] Their stated goal being to navigate conflicting demands for cheap energy and environmental quality, the authors foregrounded the matter of land rehabilitation after the life cycle of a strip-mining operation: Could land, after it was mined, be rehabilitated and reused for other productive purposes? Or, would surface mining permanently waste the land beyond the possibility of any subsequent productive use? In a strange turn of phrase, the report stated that if the goal was for post-mined lands to become "National Sacrifice Areas (Abandon the Spoils)," then there was a high probability of success: "If surface mined lands are declared national sacrifice areas, all ecological zones have a high probability of being successfully rehabilitated."[42] In other words, the most probable outcome of surface mining for coal was to permanently alter the land and destroy its productivity, while the least probable was "complete restoration."[43] Though the report provided no basis for its use of the concept, and made no explicit reference to having adapted a concept from livestock management, there can be little doubt that the study committee transferred it from livestock to energy. In the very same lands where officials from the Bureau of Land Management and the Bureau of Indian Affairs were using the concept of a sacrifice area to understand best practices in livestock and pasture management, the authors of this federal study used it to understand possible outcomes of coal strip-mining.

Lands Surface Mined for Coal in the Western United States (Cambridge, MA: Ballinger Publishing Co., 1974).

[41] Ibid., 1, 7.

[42] Ibid., 85-86. "Rehabilitated" here actually means the opposite: The report says that if the "rehabilitation" goal is to sacrifice the land and abandon any hope of rehabilitating it for a subsequent use, then strip-mining would be successful in achieving that goal.

[43] Ibid., 86.

Even though the report only used the concept twice, both the Environmental Defense Fund and the National Coal Association referenced the controversial concept in their official comments on the report. The former argued that these deliberations over federal policy were essential because they would set in motion a process by which Western lands would either be rehabilitated or made into a "national sacrifice area."[44] He also manifested the concept's mobility beyond coal when, less than a month later, he used it in a hearing before the Atomic Energy Commission on nuclear matters, where he also advocated for strong federal policy in favor of rehabilitation.[45] The coal spokesman, by contrast, contested the concept. In his judgment, the report "overplays repeatedly the idea of 'national sacrifice areas,' which are fuzzily defined … as areas where nothing would be done to the land after mining—the spoils would be abandoned and revegetation left to the wind and bird droppings." He argued that even if this accurately represented what happened in Appalachia, it was not likely to happen in the West. In fact, he argued, the use of this "spurious theme" and "false concept" cast doubt on the entire report. "It raises a suspicion," he continued, "that scientific objectivity, which is so essential to a meaningful dialogue, is somewhat lacking."[46] He protested that this excessive concept was inappropriate to the kind of rational, objective deliberation that a scientific society ought to engage in on these matters. The environmentalist's critical use of the concept and the coal industry spokesman's critique of it are evidence that it was, at its very moment of transference from livestock management to energy, a critical concept meant to place limits on the coal industry's license to operate in the region.

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[44] Ibid., 183.

[45] *Report on Energy Research and Development*, Atomic Energy Commission (Washington, DC: US Government Printing Office, 1974).

[46] *Rehabilitation*, National Research Council, 160, 163.

The way that one Wyoming journalist combined energy independence and coal's westward expansion in testimony before Congress in 1974 displays how the concept communicated moral and theological connotations—in addition to an empirical sense of things—from its very moment of transference from livestock to energy. On the one hand, journalist Bruce Hamilton welcomed the change from a "laissez-faire energy policy" that "left Appalachia in economic and ecological ruin" to a coordinated, national energy policy. On the other hand, he argued, "Project Independence is not the answer I am seeking." It would merely exacerbate laissez-faire's negative impacts, especially in Wyoming. "Project Independence tells us how we can continue our energy-wasteful lifestyles, insure corporate energy profits, despoil the environment to unimaginable ends, and become independent of the Arabs by 1980." It will also "condemn future generations of Americans to live with deadly radioactive wastes, unreclaimable coal strip mines, mountains of oil shale tailings, and other national sacrifice areas; sacrifices to our greed and the god of conspicuous consumption."[47] In the crucible of the oil crisis and Cold War politics and religion, those who resisted the industrial colonization of Western lands converted a conservationist concept for managing land and animals into a morally infused, critical energy concept that inseparably bound together the fates of both land and people: Sacrificing particular lands for the nation is tantamount to sacrificing the people who dwell in them. Hamilton also made explicit that the concept carried a critical theological dimension: Turning his home state of Wyoming into an energy colony for the nation was tantamount to sacrificing it and its people to a false god, with damning consequences.

Hamilton reflected the concept's relative stability until the late-1970s. Hamilton's account of the concept bound together empirical descriptions with usually implicit moral and

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[47] *Federal Coal Leasing Program*. Hearings, 93rd Cong., Second Session (April 18, 1974) (Statement of Bruce Hamilton, resident of Lander, WY), HeinOnline.

theological significance. At the empirical level, the methods of energy extraction being proposed for Western lands would alter them beyond rehabilitation. Such a plan was morally bankrupt, as it would threaten present and future human life and livelihood, rendering particular locales, economies, and ways of life expendable by distant elites. This was particularly acute given that the federal government owned, and therefore controlled, much of the West's land. Furthermore, the nation's soul or right standing in relation to history, God, and/or nature was at stake. A false sacrifice of this kind signaled an idolatrous turn in the nation's development, offering up particular lands and peoples as sacrifices to achieve a vision of the nation's good, which was understood largely in terms of energy security and consumption-driven economic development. *Washington Post* journalist Helen Huntington-Smith flagged the concept's explosive connotations in a 1975 article:

> The panel that issued the cautious and scholarly National Academy of Sciences report unwittingly touched off a verbal bombshell. Certain sites, it said, must be given up as impossible to reclaim or even rehabilitate, and for these hopeless areas ("Abandon the Spoils"), it coined the term "National Sacrifice Area." The words exploded in the Western press overnight. Seized upon by a people who felt themselves being served up as "national sacrifices," they became a watchword and a rallying cry and the impression they left was supported by an unfortunate official utterance.[48]

Could it be that this "unfortunate official utterance" exploded across the West because the concept's multilayered significance was felt to accurately represent what was at stake, moreso than a more scientific, objective term might? A few months later, for instance, Colorado Governor Richard Lamm wrote an op-ed in the *New York Times* to the coastal elites who exercised a disproportionate amount of influence over federal energy policy in order to meet their energy demand. His message to this population: Do not sacrifice us, our water, and our agricultural economy to supply your energy consumption during a time of crisis, at least not

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[48] Helen Huntington-Smith, "The Wringing of the West," *Washington Post*, Feb. 16, 1975, ProQuest Historical Newspapers.

without our consultation and a "calm, thoughtful" process. The federal government in Washington, D.C., he implied, which owned large swaths of the West, was like the livestock manager who divides the land between verdant pasture and sacrifice lots. But, he pleaded, "The West, understandably, doesn't want to become a 'national sacrifice area.'" At a time when the federal government faced "a terrible temptation to override the interests of the states" to pursue a hurried fix to the crisis, "someone or some areas" were going to "pay too heavy a price." Having already encountered the boom-and-bust cycles of previous extractive enterprises, the West already knew the costs of refashioning entire economies around fickle international markets, and they refused to become victims of an "energy hurricane."[49]

These empirical, moral, and theological elements were enriched as the concept continued to move across social borders and geographic space. By 1976, Appalachian residents used the concept to describe Appalachia itself, and not just the Western lands that many feared would be Appalachianized.[50] For example, the Appalachian Alliance's 1979 pamphlet titled *National Sacrifice Area* foreshadowed both the next stage of the concept's development—from a narrow focus on energy toward an expansive focus on environment and economy—and its eventual reemergence in Appalachia, after a long dormancy, in the late 1990s through the nascent movement against mountaintop removal.[51] Yet the concept of a sacrifice area, which came into being through friction—between rural and urban cultures, libertarian and liberal energy ideologies, and conservationist and critical vocabularies—underwent significant development by Native Americans from the late-1970s through the 1980s. After the concept emerged in the movement of coal strip-mining from Appalachia to the West, Western indigenous groups

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[49] Richard Lamm, "Energy Development and the Worried West," *The New York Times*, September 14, 1975, 187, ProQuest Historical Newspapers.

[50] McCarthy, "Who's Who in Appalachia?," 69.

[51] Appalachian Alliance, *National Sacrifice Area* (1979), 3, Archives of Appalachia, East Tennessee State University.

fashioned it into the critical concept that Robert Bullard and the environmental justice movement carried back eastward and southward in the 1990s, and across the globe soon after that.

Native Americans in the West adapted the sacrifice area concept in the midst of another round of oil crisis, this time catalyzed by the Iranian Revolution in 1979, and another push to exploit Western states' resources in the name of energy independence. The concept's geographic focus shifted toward Indian reservations in the West and Southwest, where approximately 60 percent of the U.S.'s energy resources—coal, uranium, and shale oil—were located, and where governance was contested between the Bureau of Indian Affairs and tribal governments. Lands that the U.S. government had granted to Native American tribes because of their perceived worthlessness were suddenly found by the federal government and extractive industries to be extremely valuable. In that new situation, Native American leaders vigorously debated what was to be done. Do we use the instruments of white culture to exploit our energy resources and thus gain the necessary economic power with which to achieve tribal sovereignty and self-determination vis-à-vis the Bureau of Indian Affairs? Or, do we eschew settler colonial methods of resource extraction and capitalist development and preserve the integrity of our indigenous lifeways, traditions, and values? Peter McDonald, the Navajo chairman, represented the former view. He organized and led the Council of Energy Resource Tribes (CERT) from 1975, which he described as "the native American OPEC." His vision was "to use the very structure devised by whites for their protection to assert what we describe as Indian self-determination, meaning that this is our reservation, that we have a certain sovereignty and we're going to exercise it." Navajo activist John Redhouse, representing the latter, anti-extractive view, argued that "In a generation, the resource will be played out and you'll have a few Native American sheiks and an impoverished mass." In his view, the government and energy companies simply used CERT to legitimize their plans to turn the Western reservations into "national sacrifice areas." CERT's

plans, he concluded, were "spiritual and physical genocide."[52] The concept thus attained a tragic socio-ecological dimension: Within a context of severe constraint and injustice, if we want survival and liberation, will we sacrifice our land and values or prolong our poverty and marginality?

During the 1980s, indigenous thinkers centralized in the sacrifice area concept the issue of uranium mining, nuclear development, and radioactive waste (though coal and oil were never far from view) to critically assess the ways genocide and ecocide were intertwined: Both were rooted in white settler colonial culture. One consequence of nuclear's unfathomable temporalities was its potent symbolism; places destroyed for nuclear development were gone forever. The Four Corners region of Colorado, Utah, New Mexico, and Arizona, an area largely inhabited by the Navajo and Hopi, was one critical site of the concept's development during this period. Soon after an Exxon chairman suggested in 1980 that the government declare the area "a national energy zone," where the "normal rules" governing environmental protection would not apply, a documentary film was released titled, "The Four Corners: A National Sacrifice Area?"[53] It suggested, albeit with limited scientific evidence, that there were more cancers, birth defects, miscarriages, and infant deaths in communities near radioactive waste sites. According to one reviewer, the film "raise[d] an important question: whether the hidden costs of uranium mining, coal strip-mining and oil-shale projects on the Colorado Plateau outweigh the short-term gains."[54] Wasting the land for energy resource exploitation, in other words, was continuous with other

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[52] Howell Raines, "American Indians Struggling for Power and Identity," *New York Times*, Feb. 11, 1979, ProQuest Historical Newspapers.

[53] John M. Berry, "Gearing Up in the West For Oil Shale Production," *Washington Post*, Sept. 28, 1980; Christopher McLeod, *The Four Corners: A National Sacrifice Area?* (Oley, PA: Bullfrog Films, 1983).

[54] John Corry, "TV: 'Four Corners' Energy and the Land," *New York Times*, Nov. 15, 1983.

federal policies, including forced sterilization and relocation campaigns, to annihilate Native Americans.

American Indian Movement leader Russell Means enriched the concept theoretically perhaps more than any other indigenous thinker when he linked it to the sacrifice of entire peoples. An observer of self-empowerment and indigenous movements in the U.S. and abroad, Means fought against an alliance between the indigenous movement and Marxists, because Marxism, like capitalism, promoted industrialization. Though both were called "revolutions," he argued, they are better understood as "continuations" of European culture.[55] As evidence, he pointed to Marxists in the USSR, China, and Vietnam who regularly justified the sacrifice of indigenous peoples in the name of industrialization. Because European visions of industrial society needed abundant energy sources, entire regions, such as his Pine Ridge, would be rendered "uninhabitable forever. This is considered by industry, and the white society which created this industry, to be an 'acceptable' price to pay for energy resource development." However, "We are resisting being turned into a national sacrifice area. We're resisting being turned into a national sacrifice people. The costs of this industrial process are not acceptable to us. It is genocide to dig the uranium here and to drain the water-table, no more, no less."[56] In short, he said, "I do not believe that capitalism itself is really responsible for the situation in which we have been declared a national sacrifice. No, it is the European tradition; European culture itself is responsible. Marxism is just the latest continuation of this tradition, not a solution to it. To ally with Marxism is to ally with the very same forces which declare us an acceptable 'cost.'"[57] Other influential indigenous thinkers, including Winona LaDuke, Ward Churchill, and

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[55] Russell Means, "The Same Old Song," in *Marxism and Native Americans*, ed. Ward Churchill (Boston: South End Press, 1983), 26.

[56] Ibid., 25.

[57] Ibid., 28.

George Tinker, embraced the sacrifice area concept as Means theorized it. Further developing the concept's critical thrust, they together made it a critical political-ecological concept that cast doubt on the entire enterprise of Euro-American culture, as a whole, for the ways it instrumentalized and wasted lands and peoples to feed its own development. Churchill summarized it as a link between ecocide, genocide, and colonization.[58] Traci Voyles' more recent book *Wastelanding*, which begins with a chapter titled "Sacrificial Land," continues this tradition of thought to argue that wastelands, also called "sacrifice zones," are the "other" through which modern industrialism is established.[59]

The concept's next major episode occurred in the 1990s with the rise of the environmental justice (EJ) movement. That movement had begun in the South in the early 1980s to counter environmental racism—the siting of toxic land uses in economically poor and racially minoritized communities. Nurtured by the Black church, the EJ movement emerged from the civil rights, Black Power, and environmental movements, but its leading spokespersons distinguished it from mainstream environmentalism. Events in majority-African American Warren County, North Carolina, were pivotal for the movement, because there the EJ movement coalesced in opposition to the state's decision—supported by mainstream environmental organizations—to solve a statewide toxic PCB problem by concentrating and dumping the PCBs in one place. Robert Bullard, the movement's leading scholar, led the United Church of Christ's Commission on Racial Justice study to document similar cases across the South and elsewhere around the country. That study showed that the problem was systemic: Toxic dumps and other "locally unwanted land uses" (LULUs) were routinely sited in economically poor communities and

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[58] Ward Churchill, *Struggle for the Land: Native North American Resistance to Genocide, Ecocide, and Colonization* (San Francisco: City Lights, 2002), 239-291.

[59] Traci Brynne Voyles, *Wastelanding: Legacies of Uranium Mining in Navajo Country* (Minneapolis, MN: University of Minnesota Press, 2015), 9-10.

communities of color. Bullard, Rev. Benjamin Chavis, Dana Alston, and other leading scholar-activists in the movement to end environmental racism later met with Native American leaders (among others) at the First National People of Color Environmental Leadership Summit in 1991 to produce the influential "Principles of Environmental Justice" document. Though that document did not explicitly refer to sacrifice areas, the concept, as developed by Native American thinkers, was present, including the theoretical linkage Means and Churchill made between colonization, ecocide, and genocide. Soon after the summit, Bullard adapted the sacrifice area concept, which he referred to as "environmental sacrifice zones," to describe environmental disparities in rural and urban places, like Warren County, that disproportionately bear the burdens of pollution, chemical exposure, and toxic waste.[60]

In addition to geographically moving the concept eastward and southward, the EJ movement also expanded the sacrifice zone concept in two consequential ways that facilitated its national and global expansion. First, EJ scholars and activists used it to name any geographical area that bore a disproportionate amount of industrial pollution, toxic chemical exposure, or other environmental harms associated with industrial production or national security. In short, it became synonymous with Bullard's concept of a dumping ground. Steve Lerner stabilized the concept for EJ scholars: "sacrifice zones," he argued, are "semi-industrial areas—largely populated by African Americans, Latinos, Native Americans, and low-income whites—where a dangerous and sometimes lethal brand of racial and economic discrimination persists." These are places "where residents are exposed to disproportionately elevated levels of hazardous chemicals."[61] He argued that in spite of the concept's origin in nuclear development (which my

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[60] Robert D. Bullard, "Overcoming Racism in Environmental Decisionmaking," *Environment* 36, no. 4 (1994): 43.

[61] Steve Lerner, *Sacrifice Zones: The Front Lines of Toxic Chemical Exposure in the United States* (Cambridge, MA: MIT Press, 2010), 2.

genealogy suggests is only partly accurate) "the 'sacrifice zones' designation should be expanded to include a broader array of fenceline communities or hot spots of chemical pollution where residents live immediately adjacent to heavily polluting industries or military bases."[62] After canvassing various labels for these places, including "fenceline communities," he settled on sacrifice zones "because it dramatizes the fact that low-income and minority populations … are required to make disproportionate health and economic sacrifices that more affluent people can avoid." And this "pattern of unequal exposures constitutes a form of environmental racism that is being played out on a large scale across the nation."[63] The concept thus named for the EJ movement a much larger phenomenon than energy production and consumption. It named the intertwined environmental and human costs of national and economic development, in general.

As the concept was transferred from livestock management to energy production and, finally, to environmental justice, the fence imagery came full circle with the naming of "fenceline communities," but with one crucial difference. Whereas the original fence was a technology with which livestock managers could contain the ecological damage "irrational" animals might do to pastureland, the fence that separated industrial (or military) sites from residential areas upheld only the appearance of containment; unlike animals, toxins flowed, carried by wind, water, and soil, beyond the (actual and metaphorical) fences intended to separate one land use (industrial) from another (residential). Though theorized as a general phenomenon by the EJ movement, this inability to contain the damage was already present in the concept's development by indigenous thinkers. "The ecological effects of radioactive colonization know no boundaries," wrote Ward Churchill. Toxic particles, he continued,

> do not know they are intended to stop when they reach non-Indian territory. Contaminated water does not know it is supposed to pool itself only under Indian wells.

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[62] Ibid., 3.
[63] Ibid.

> Irradiated flora and fauna are unaware they are meant only for consumption by indigenous "expendables." The effects of such things are just as fatal to non-Indians as they are to Indians. … Neither genocide nor ecocide can be "contained" when accomplished by nuclear means. The radioactive colonization of Native North America therefore threatens not only Indians, but the survival of the human species itself.[64]

In the hands of indigenous and EJ theorists, sacrifice zones became a concept for naming the human inability to manage and geographically contain the damage produced by using highly potent forces, such as uranium and buried sunshine (fossil fuels). This is to say that political borders are porous to ecological flows. "Like it or not," wrote Churchill, "we are all—Indian and non-Indian alike—finally in the same boat."[65] For him, though those who live along the fencelines are the first line of sacrifice, their experience signals the *telos* of a particular form of life that renders ecologies and communities expendable in the name of a greater national, economic, or historical-material good. (Later discourses about climate change and the Anthropocene would name similar dynamics at the planetary scale.)[66]

Akin to how Native American thinkers and libertarian agriculturalists in the West incorporated the sacrifice area concept within thick worlds of symbolic meaning, practice, political vision, and critique, EJ scholars and activists also thickened the concept with racial, class, and gender critiques. Bullard wrapped it into critiques of institutional and systemic racism upheld by market and state entities. "Environmental racism," he argued, "combines with public policies and industry practices to provide *benefits* for whites while shifting *costs* to people of color."[67] Though no individual or collective agent orchestrated this sacrificial pattern, it nevertheless implicated entities at every level, from local zoning boards and federal agencies to

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[64] Churchill, *Struggle for the Land*, 279.

[65] Ibid.

[66] See, for instance, Franz J. Broswimmer, *Ecocide: A Short History of the Mass Extinction of Species* (Sterling, VA: Pluto Press, 2002), especially chapter 4, titled "The Planet as a Sacrifice Zone."

[67] Robert Bullard, "The Threat of Environmental Racism," *Natural Resources & Environment* 7, no. 3 (Winter 1993): 23 (emphasis original).

industry personnel, mainstream environmental organizations, and research institutions. Bullard and others drew on civil rights and Black Power movements to seek policy, legal, and political changes to counteract the systemic forces that created unequal environments. In short, sacrifice zones were interpreted as an assemblage of structure and agency.

With roots in the Black church, the EJ movement also incorporated the concept within theological reflection. Womanist ethicist Emilie Townes, for instance, theorized that the siting of "toxic waste landfills in African American communities" was a "contemporary version of lynching a whole people."[68] The common practice of dumping toxins in Black communities was analogous to lynching in that it was a method of social control; it also threatened womanist practices of wholeness. Within womanist theological reflection, Delores Williams theorized that twentieth-century coal strip-mining and the nineteenth-century practice of using enslaved people as "breeder women" were two manifestations of a singular sin that she associated with white defilement of land and Black bodies.[69] James Cone, drawing partly on Williams, likewise argued that "the logic that led to slavery in America … is the same one that leads to the exploitation of animals and the ravaging of nature."[70] For these thinkers, the character of sacrifice manifested in contemporary political ecologies reflected particular traditions of sacrificial theology by which whites rationalized their superiority over Black populations and justified the latter's expendability for their advancement. As it was used by theologians, scholars, and EJ activists, the concept was almost universally accompanied by a rallying cry to resist becoming someone else's sacrifice, to

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[68] Emilie Townes, *In a Blaze of Glory: Womanist Spirituality as Social Witness* (Nashville: Abingdon Press, 1995), 55.

[69] Delores Williams, "Sin, Nature, and Black Women's Bodies," in *Ecofeminism and the Sacred*, ed. Carol J. Adams (New York: Continuum, 1993), 24-29.

[70] James Cone, "Whose Earth is it Anyway?," in *Earth Habitat: Eco-Injustice and the Church's Response*, eds. Dieter Hessel and Larry Rasmussen (Minneapolis: Fortress Press, 2001), 23.

refuse to cede the power over life and death to unjust structures and institutions managed by people who claim be stewards of the good of the whole.

It was the EJ movement that reintroduced the concept back to Appalachia after its two-decade-long sojourn through the American West. It had disappeared from Appalachia after the anti-strip-mining movement entered its less confrontational, more reformist phase in the 1980s, and then reappeared in 1997 with the movement against mountaintop removal.[71] (I return to this story in the next section.)

However, this genealogy would be incomplete without an account of how, since the 2000s, the concept has been adapted by diverse groups across the globe to contest extractive and other industries that render peoples and lands expendable. Indigenous thinkers in the 1980s and 90s regularly used it to describe the Athabasca tar sands region of Canada, where oil companies destroyed enormous tracts of boreal forest for unconventional oil production. Yet even its widespread use beyond North America can be traced primarily to the EJ movement. For example, both leading Latin American theorists of extractivism, such as Maristella Svampa, and local groups contesting extractive industries have adapted the concept to local conditions, as was done by the "Mothers of the Sacrifice Zone in Resistance" in Chile.[72] According to Svampa, a scholar who put in question a narrow, region-wide focus on neoliberalism, the proliferation of sacrifice zones under leftist regimes in Latin America bears witness to a much deeper problem than simply the neoliberalism associated with the Washington Consensus; it points, rather, to a problem she names the "Commodities Consensus"—a widespread turn across ideological lines toward natural

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[71] For an account of the transition of the anti-strip-mining movement's militant phase in the 1960s and 70s to a reformist phase in the 1980s and 90s, see Montrie, "'We Mean to Stop Them'."

[72] Paola Bolados García, Alejandra Sánchez Cuevas, Katta Alonso, Carolina Orellana, Alejandra Castillo and Maritza Damann, "Ecofeminizar el territorio: La ética del cuidado como estrategia frente a la violencia extractivista entre las Mujeres de Zonas de Sacrificio en Resistencia (Zona Central, Chile)," *Ecología Política* 54 (Dec 2017): 81-86.

resource exploitation and industrialization as the pathway to social, national, and economic progress.[73] From her perspective in Argentina, even monocultural and industrial forms of agriculture have become extractivist endeavors: They have more in common with mining than with agriculture, including the fact that they produce environmental sacrifice zones. Canadian public intellectual Naomi Klein's theorization of the concept in relation to global climate change and extractivism popularized it among scholars of planetary environmental change.[74] For Klein, the proliferation of sacrifice zones reveals the global dangers unleashed by "the colonial mind," including its unifying pursuit of economic progress and its use of fossil fuels to achieve a destructive vision of freedom. The authors of the French report *No More Sacrifice Zones*, echoing Svampa and Klein, critiqued our global extractivist economy and cast a constructive vision of a global commons beyond extractivism.[75] As deployed by these scholars and activists beyond the U.S., the concept retains the Native American critique of colonialism and extractivism, the EJ movement's broadened use of this dramatizing concept beyond energy production, and both movements' dual critique of both market and state entities, which have often worked in tandem to produce and channel bifurcated geographies of sacrifice and abundance. In short, though it has remained a largely leftist critical concept, it nevertheless includes within it a critique of both capitalist and socialist models of fueling development and progress with natural resources.[76]

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[73] Maristella Svampa and Enrique Viale, *Maldesarrollo: La Argentina del Extractivismo y el Despojo* (Buenos Aires: Katz Editores, 2014), 81-128.

[74] Naomi Klein, *This Changes Everything: Capitalism vs. the Climate* (New York: Simon & Schuster, 2014), 161-187.

[75] Alice Richomme, Marion Veber, and Léna Bauer, *No More Sacrifice Zones: For Alternatives to Our Predatory Natural Resorces Model* (Paris: France Libertés Foundation, 2017). See also Anna Bednik, Extractivisme: *Exploitation Industrielle de la Nature: Logiques, Conséquences, Résistances* (Le Passager Clandestin, 2016).

[76] My genealogy of the concept of a sacrifice zone can be brought into fruitful conversation with Karl Polanyi's theory that we have witnessed in recent centuries a disembedding of markets from the social relations and natural systems that sustain human life and freedom and ought to place limits on the market forces that commodify life, land, and money. The market ideology treats people (labor) and nature (land) as commodities, but this is out of step with reality and the basis of freedom. The consequences of

As evidenced by how the sacrifice zone concept developed through time, social friction, and geographical mobility, the concept is meant to connote something that exceeds empirical description. Even with its relatively stable range of technical meaning, it is more than a technical concept for describing an intertwined social and environmental phenomenon. (Other concepts would be sufficient for this.) Its meaning exceeds naked, empirical description. Scholars, activists, and journalists appear to prefer the concept of a sacrifice zone to other descriptive concepts because others—fenceline communities, dumping grounds, environmental high-impact areas—fail to accurately name the phenomenon's existential significance to those who live and assemble in the places at hand. It appears that scholars, activists, and journalists prefer the sacrifice zone concept because by containing empirical description, moral evaluation, and even religious significance (whether or not these latter two are made explicit), it is a description that more truly fits that which it describes. It at once names a phenomenon in material history, (negatively) evaluates that phenomenon, and renders the phenomenon liable to critique, often with reference to a particular account of idolatry, ideology, or justice.

Though the concept's usage through time and across space bespeaks its adaptability, its range of meanings in contemporary usage is relatively stable. I identify nine such meanings. First, it is fundamentally a geographical concept about the production of space: Environmental harms are concentrated in some places in order to protect the environmental health and sustainability of

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commodifying things that cannot be commodified ("fictitious commodities") are disastrous. The sacrifice zone concept is one way to identify the consequences of the commodification of people and nature. See Karl Polanyi, *The Great Transformation: The Political and Economic Origins of Our Time* (Boston: Beacon Press, [1944] 2001).

other places.[77] Geographies of environmental sacrifice have been the necessary corollary of geographies of environmental abundance. The latter depend on and are constituted by the former. This is perhaps the cornerstone meaning that made the concept available for transfer from livestock and land management to energy and environmental justice.

Second, the geographic distinction that the concept names is inextricably linked to an abstract conception of the greater good. While within the context of its earliest usage it referred to sacrifices made for the national good of energy independence, the particular content defining that greater good has shifted over time. In addition to energy independence, it has included, for example, the goods of economic growth, national security, social progress, white cultural expansion, and historical-material development. The flexibility of the greater good against which particular lands and people are rendered an acceptable sacrifice is perhaps the element that has allowed the concept to stick to very different social groups and contexts across the country and the globe. Regardless of its content, however, that greater good is conceived as something abstract; it is an idealized political-ecological vision that is so powerful that it does not require the consent of those who bear the bulk of its costs.

Third, it locates and dislocates conceptions of agency. Even though the sacrifice zone concept is fluid with regard to the locus of agency, it nevertheless implies that there is an agent (individual, collective, or institutional) that intervenes with material, social, or conceptual tools (fences, policies, laissez-faire policies) to enact a separation between lands slated for sacrifice and lands slated for abundance. The sacrifice, in other words, is a human production; it is not natural, even if it might be considered natural that societies must face difficult choices in a tragic world.

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[77] For an influential account of the social production of space, see Neil Smith, *Uneven Development: Nature, Capital, and the Production of Space*, 3rd edition (Athens, GA: University of Georgia Press, [1984] 2008).

The concept thus denaturalizes the phenomenon that the concept names, thus rendering it a matter of human history and social construction.

Fourth, as the concept was transferred from livestock to energy to the environment, it was inverted. What had been a managerial, conservationist concept paired with a material technology—a fence—instead became a concept to name the human inability to contain sacrifices within human-drawn borders designed to distinguish between different land uses. In other words, it shifted from a conservationist concept about containing sacrifices to a critical concept about unleashing uncontainable sacrifices across space and time.[78] If certain forms of ecological harm cannot justly be distributed or metabolized—if, in other words, they require sacrifice zones—then the systems that produce them either should not exist at all or, more realistically, they should be changed in order to distribute the harms more equitably.

Fifth, the concept is intended to carry an implicit or explicit religious or theological connotation, which is usually meant to heighten its critical content, though is sometimes used to theorize its generative ambivalence. (As I address below, one coalfield resident's distinction between Appalachia as a "sacrifice zone" versus a "sacred zone" is a particularly generative case of the latter.) Indigenous theorists, and those like Klein who appeal to indigeneous concepts as an alternative to extractivist colonization, often juxtapose sacrifice zones with some notion of sacred lands or ecologies. In one instance, the Osage theologian George Tinker juxtaposed theologies that construct American Indian territories as sacrifice zones with indigenous rituals of self-sacrifice intended to reciprocate and restore the creation community after violent ruptures, such as

[78] This is encapsulated in the distinction early EJ activists drew between a Not-in-My-Backyard (NIMBY) ethic, which they saw at the root of environmental racism, and an ethic that was variously called Not-in-Our-Backyard or Not-in-Anybody's-Backyard.

hunting, that might be necessary to meet human needs.[79] Tinker thus contrasts two logics of sacrifice that constitute rival political ecologies. On the whole, however, the theological and religious connotations of the concept often remain implicit. Invocations of sacrifice might refer to specific beliefs, ritual practices, liturgies, and social institutions or, perhaps more frequently, they signify simply an ambiguous, religious conceptuality. Apart from the small number of those who, like Tinker, pair a critical account of sacrifice zones with a constructive vision of sacrifice, the concept is otherwise conceived as a negative phenomenon. The kind of sacrifice that takes place in sacrifice zones is what Johannes Zachhuber has identified as sacrifice's objective, victim-oriented dimension that is often understood in modern theory as scapegoating or victimization.[80]

Sixth, the sacrifice zone concept is fundamentally relational: It is intended to reveal that (inhabited) places of extraction, production, consumption, and waste are linked together by relationships of a particular character that can be observed, analyzed, and evaluated. It both makes these economic and ecological relations visible and morally ties together consumers with the lands and peoples with whom they are connected through supply chains and pathways of disposal. As such, it is intended to reveal the human and ecological costs that are often unnoticed, hidden, or even intentionally concealed by market mechanisms: The market price of a thing, such as coal or a kilowatt of energy, does not reflect the thing's cost to human lives and ecological relations. As a concept that reveals these hidden costs, it can be used in various ways to promote a more moral economy. Liberals, for instance, might assume that simply educating a heretofore ignorant public would lead to more enlightened forms of consumer behavior. By contrast, the EJ

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[79] George E. "Tink" Tinker, *American Indian Liberation: A Theology of Sovereignty* (Maryknoll, NY: Orbis Books,
2008), 58, 68-70.

[80] Johannes Zachhuber, "Modern Discourse on Sacrifice and its Theological Background," in *Sacrifice and Modern Thought*, eds. Julia Meszaros and Johannes Zachhuber (Oxford University Press, 2014), 12-28.

movement is more likely to use the knowledge gained by making this relational network visible in order to build legal or political power to contest and change sacrificial structures and institutions.

Seventh, the concept draws together a fluid and changing but always broad-based array of groups who simultaneously identify as an object of sacrifice even as they exercise their refusal to be sacrificed without resistance. In the 1970s, the concept drew together agriculturalists, ranchers, and environmentalists into a story about the non-industrial American West versus elite, cosmopolitan, coastal consumers. In the late 1970s and 1980s, it became one way in which the American Indian Movement developed a shared identity as "Indians," rather than as members of particular tribal councils, in opposition to white, settler-colonial culture. As it was adapted by the EJ movement, the concept similarly provided one avenue for drawing together different racially minoritized groups into the politically powerful concept of "communities of color" that share common experiences of environmental racism in rural and urban areas. It also wrapped into the pool of shared experiences other groups, including suburban white mothers and Appalachia's rural coalfield residents. In short, the sacrifice zone concept draws together changing notions of "us" and "them": We who are singled out by some criteria as an acceptable sacrifice and they who use the powers of state, market, and/or cultural production to do both the rationalizing and the sacrificing. Nevertheless, the lines between "us" and "them" are also blurred, especially when considering that, for instance, we who use or sell coal-sourced electricity might also be the we who are sacrificed for coal. This blurred element has become a potent source of tension in Appalachia, for instance, where people on both sides of the mountaintop removal issue recognize that coal mining has been both a blessing and a curse.

Eighth, the concept connotes long temporalities. On the one hand, it shares with the concept of sustainability a long future temporality. At its moment of transference from livestock

to energy, for instance, the concept named the inability to reclaim and repurpose lands that might be strip-mined for coal. Nuclear development, and in particular indigenous resistance to it, intensified this temporality. The permanent loss of land to radiation, and the unfathomable temporalities of that radiation's half-life, seemed an appropriate temporality for thinking also about the permanent loss of culture. The American Indian Movement theorized this dual loss as both ecocide and genocide. On the other hand, unlike sustainability, which is oriented toward solutions and the future, the sacrifice zone concept brings into view long histories, as well, whether they be histories of colonization, slavery, industrialization, or class and gender formation. These histories stretch back at least to the era of European expansion, and often go back further still. In other words, the sacrifice zone concept helps to name the present moment as a hinge between the long social and environmental pasts that continue to shape present sacrifices as well as the distant, unimaginable futures that form the *telos* of contemporary political ecologies of sacrifice.

Ninth, the sacrifice zone concept's richness is a consequence of its being a "boundary object" that moves between the different social worlds of activists, scholars, politicians, and managers.[81] In particular, it still remains a concept that is used as much by activists as by scholars. It was initially used in the realm of energy by scientists and bureaucratic managers in a private foundation-funded study to inform federal policymaking, was then dramatized by activists and politicians, and only later emerged as a significant scholarly concept in environmental, indigenous, critical race, and geography studies. As a boundary object, it is often accompanied by other companion concepts, including the "resource/energy colony," "resource/energy nationalism," and "resource conflicts." Even though some scholars, such as Lerner, have

[81] Boundary objects are objects or ideas that can be interpreted differently across different communities while nevertheless maintaining enough shared content to keep them relatively intact.

attempted to fix the definition of a sacrifice zone, scholars have had no final authority over the concept or its usage, which continues to be responsive to the contexts to which various groups adopt and adapt it.

Though this genealogy of the sacrifice zone concept and analysis of its semantic range is intended to fill a lacuna in the scholarly literature, my primary purpose has been to understand the material and conceptual background history behind my opening story about Sarah's movement from Appalachia to Birmingham. She said she moved southward along the Appalachians because particular places in both Central Appalachia and North Birmingham were sacrifice zones; furthermore, this is what made them places to which Christians are called.

Of particular significance in Sarah's southward movement is that while Appalachia has been integral to the concept's genealogy from the beginning, apart from a few offhand comments by Robert Bullard, Birmingham has not historically been linked to the concept or added any significant dimensions to its development.[82] Even today, neither residents nor activists refer to North Birmingham as a sacrifice zone. Why, then, did Sarah, an outsider to North Birmingham, name it as such?

Answering that question requires filling out the rest of the story by which the sacrifice zone concept reappeared in Appalachia in the midst of a nascent anti-mountaintop removal (MTR) movement there. After the anti-strip-mining movement's references to Appalachia being a national sacrifice area in the late 1970s, the concept disappeared altogether from the region until

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[82] One could argue that while Birmingham played no direct role in developing the concept of a sacrifice zone, it did, however, play a significant indirect role. The United Church of Christ's Commission for Racial Justice, which is known for its historic role in commissioning and publishing the report "Toxic Wastes and Race in the United States" in 1987, was founded in 1963 partly in response to the church bombings in Birmingham during the civil rights movement. See Karl Grossman, "From Toxic Racism to Environmental Justice," *E Magazine* (May/June 1992). According to Bullard, "North Birmingham has historically served as a dumping ground for polluting facilities. The neighborhood was an environmental 'sacrifice zone' when I did my student teaching at a high school in the area way back in 1968." Brentin Mock, "50 Years After Selma, A Search for Environmental Justice," *Grist*, Mar 6, 2015, accessed April 21, 2020, [h…]://grist.org/climate-energy/50-years-after-selma-a-search-for-environmental-justice/.

it was revived by the anti-MTR movement in the late-1990s. In her 1997 article, "Activists want to revitalize a movement," West Virginia journalist Martha Bryson Hodel quoted a West Virginia University law professor saying that MTR is turning the state into "a national sacrifice area."[83] Shortly thereafter, sociologist Julia Fox published a pivotal journal article, titled "Mountaintop Removal in West Virginia: An Environmental Sacrifice Zone." In the article, she used Marxist analysis to theorize MTR and argue against inadequate reformist and regulatory responses to it.[84] More fundamental changes in the character of social and environmental relations, she argued, were necessary. Fox thus set the stage for the anti-MTR movement's subsequent use of the concept, particularly by the organizations and individuals that Restoring Eden would partner with to carry out the citizen science projects.

When Sarah referenced the concept as part of her reasoning for moving from Appalachia to Birmingham, she reflected its usage by the anti-MTR movement. Neither Peter nor Restoring Eden had explicitly used or developed the concept. Yet the residents, organizations, and scientists they partnered with certainly did. Spokespersons for Kentuckyians for the Commonwealth, Coal River Mountain Watch, and the Ohio Valley Environmental Coalition, all three of whom partnered with Restoring Eden on the logistics of the projects, described Appalachia as a sacrifice zone.[85] Even Michael Hendryx, the lead scientist who published the findings from the health studies, said the affected "mining communities are America's sacrifice zone" in a 2015

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[83] Martha Bryson Hodel, "Activists want to revitalize movement," *Charleston Gazette*, August 18, 1997.

[84] Julia Fox, "Mountaintop Removal in West Virginia: An Environmental Sacrifice Zone," *Organization & Environment* 12, no. 2 (1999): 163-183.

[85] Ken Ward, Jr., "Environmental groups to protest Bush," *Charleston Gazette*, January 22, 2002; James Carroll, "U.S. proposes new rules on mountaintop mining," *Louisville's Courier-Journal*, May 30, 2003; Taylor Kuykendall, "Coal activist: Communities near mountaintop removal live in 'sacrifice zone'," *SNL Daily Coal Report*, April 7, 2015. It is also pertinent to note that Sarah interned with the Ohio Valley Environmental Coalition one summer.

interview.[86] Sarah, in short, imported the concept into Restoring Eden's citizen science projects by way of the anti-MTR movement. Whereas Peter tended to describe the projects as a way to make coal's "externalities" and "true costs" visible, Sarah drew on the anti-MTR movement's concept of a sacrifice zone to reframe the projects as a response to unjust sacrifice. And her understanding of it echoed the complexity that movement bequeathed to the concept.

In Appalachia, for instance, while the concept still largely retained its negative connotation, its ambivalence and complexity also intensified. One 2009 article titled "Making a 'Sacred Zone' in Appalachia," written by Bob Kincaid, a white West Virginia radio host and anti-MTR activist with Coal River Mountain Watch, theorized the concept's excessive duality.[87] In light of my argument in this chapter that coal's sacrifice zones are a site of tension between rival political ecologies of sacrifice, it is worth examining his argument in detail. Kincaid opened with a line from Martin Luther King, Jr.'s final speech: "When people get caught up with that which is right and they are willing to sacrifice for it, there is no stopping point short of victory." Gauley Mountain and the residents of Fayette County, West Virginia, Kincaid observed, were under attack by "a coal company willing to sacrifice us for a load of coal." And he observed that the same pattern of sacrifice was being repeated across the entire region. Echoing King, he argued that it was time for preachers to pair talk of the New Jerusalem with that of a "New Appalachia." The sacrifices made by anti-MTR activists were, like King's, made in the name of a much larger, eschatologically rooted vision of social and economic justice in a new creation. Then he reflected on the words of Black Appalachian visionary Van Jones who said, "'We're going to turn Appalachia from a Sacrifice Zone to a Sacred Zone.'" "Truly," Kincaid continued, "Appalachia is

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[86] Jessica Wapner, "The Cancer Epidemic in Central Appalachia," *Newsweek*, July 31, 2015.

[87] Bob Kincaid, "Making a 'Sacred Zone' in Appalachia," Daily Yonder and Common Dreams, May 4, 2009, accessed April 7, 2020, [h…w].commondreams.org/views/2009/05/04/making-sacred-zone-appalachia.

a Sacrifice Zone and the ashes lay on the altar everywhere we look. … How then, do we create that Sacred Zone?" Though it must begin with ending the practice of MTR, he argued that it was at root a spiritual matter of misbegotten belief in "hateful lies": Coalfield workers "have been conditioned to believe that they lack the skills to work in an economy not predicated on the ruin of everything around them." He pointed, in contrast, to a proposed community-led wind farm project on Coal River Mountain. The latter was

> a lamp to Appalachia in Mountain Removal's endless night. It refutes Big Coal's insulting premise that Appalachian people are good for nothing more than destroying their own homes and communities. … Part of making Appalachia a 'Sacred Zone' lies in making Appalachia whole. That would require us to fix the land that has already been stripped. We can keep people working by doing the reclamation work the scofflaw coal companies evade once they've extracted the coal and the profit from these hills. In the meantime, while we're putting Mountain Removal's wrongs to right, we can be installing the components of the new, green economy in Appalachia.

For him, the pathway to making Appalachia a "sacred zone" lay in reclaiming the land for a new economy in a New Appalachia. That vision could only be achieved if Appalachian people participated in a different kind of sacrifice that would "carry our sacred heritage into the coming century" and "rethink how we use this precious, well-watered soil." He closed his article by calling for a different set of sacrifices: "Generations of Appalachian folk have survived in nigh unsurvivable circumstances"; their "sacred energy of community … will be the foundation of the New Appalachia, and our anguished sacrifices will finally give way to victory."

Kincaid invested the sacrifice zone concept with a creative and constructive duality present, at least, within Christian conceptions of sacrifice. On the one hand, death-dealing sacrifice was being imposed by largely external agents upon Appalachia's lands and people through a combination of money power, state power, and false—though powerful—public narratives. On the other hand, Appalachian traditions of sacrifice, akin to the sacrificial teaching of King, could narrate its people and lands within an eschatological vision of life-giving relations, even if doing so might put individuals at risk of sharing King's fate. In other words, the falsely

sacrificed should draw on their heritage of responding to false sacrifices with truer sacrifices to make Appalachia a "sacred zone." To make the vision a reality, he argued,

> We need the minds and hands to make that dream concrete. We need economists and accountants and finance specialists to make this dream reality. We need labor organizers to speak directly to the people who will build with their own hands the economy of the New Appalachia. We need musicians, painters, writers, photographers and poets to carry our sacred heritage into the coming century. We need agriculturalists and biologists to rethink how we use this precious, well-watered soil.

This is no account of sacrifice as austerity, making do with less, entering into suffering, or rushing headlong into risky territory, even if the actions Kincaid called for might generate opposition and danger. The kind of sacrifices he envisioned to make Appalachia a sacred zone were offerings of good, meaningful work: forms of creative, professional, agricultural, and scientific production that take the unique particularity and ecology of Appalachian land seriously.

Kincaid's constructive vision of Appalachia as an alternative kind of sacrifice was neither exceptional nor insignificant. His article was reposted across Appalachian digital media, suggesting that it resonated with others in the region. Furthermore, Christian ethicist Andrew Thompson's monograph *Sacred Mountains* implicitly worked with the tension between Appalachia as both sacrifice zone (negative) and sacred geography (positive).[88]

When Sarah called both Appalachians and Birminghamians "sacrificable communities," she indicted a utilitarian moral logic (which is inherently a negative sacrificial logic)—*x* number of premature deaths are acceptable so long as the outcomes for the whole (or the majority) are *y*—which, for her, was plainly false. It put the power over life and death in the hands of those who live outside sacrifice zones in greener pastures, who accommodate themselves to the tragic reality that someone must bear the costs.

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[88] Andrew R. H. Thompson, *Sacred Mountains: A Christian Ethical Approach to Mountaintop Removal* (Lexington, KY: University Press of Kentucky, 2015).

For Sarah, however, that utilitarian logic went against the grain of Jesus' cross. In the economy of Christ, no cynical appeal to a greater good can justify routinized, premature death. When I asked Sarah one afternoon why she was so committed to the health studies, even in the face of seemingly insurmountable opposition, she referred me to the sermon that the pastor of a small, Black Baptist church inside the North Birmingham sacrifice zone had preached earlier that morning. The church was a half block from one of the coal plants and a few blocks from the Baptist church where Rev. Fred Shuttlesworth, who led the Birmingham campaign during the civil rights movement, was bombed—twice. The pastor doubled as a science teacher in a Birmingham public school. "Jesus had no throne but the cross," he preached that morning. Turning, then, to reflect on the two thieves crucified beside Jesus, he pointed out that one's heart was softened and the other's hardened. "Which one really encountered Jesus," he invited us to ponder. For Sarah, that message spoke to her struggle to manage the health study. She had every reason to harden her heart: She and the project had so little money, and she was up against the most economically and politically powerful groups in Alabama. However, "The best sermon you could ever preach is how you live your life," the pastor said. The sacrificial logic he invited the congregation to inhabit held up the power of life over death and actions over words. He spoke about an economy in which the crucified is the one with true power and in which the rest of us find our place by the character of our response: Will we let our crosses be drawn into Jesus' cross or will we harden our hearts? The pastor's call to identify with Jesus' cross strengthened Sarah in her commitment to citizen science as a way to love her neighbor as Jesus loved her.

Though they are ultimately irreconcilable, both concepts of sacrifice—utilitarian and Christological—were operating in and upon North Birmingham and Central Appalachia. Sarah

moved from one sacrifice zone to another because she believed that was where Jesus was, for his love had taken him to a sacrifice zone outside the city gate, where he defeated the power of death. That was her example to follow.

IV. Sacrifice in Environmental Politics

The genealogy of the sacrifice zone concept I sketched above demonstrates that this concept was adopted and adapted by a constellation of movements that eventually coalesced under a broad rubric of political ecology (which, for my purposes, should be understood in a broad sense to include environmental justice), which combines critical forms of social and environmental analysis with a democratic political vision. The primary understanding of sacrifice thus invoked is something negative, something to be critiqued and changed. It is about the objective character of sacrifice—sacrifice in its noun form, as victimization, victimhood, and scapegoating. This is a focus on sacrifice's recipient dimension. In a theological idiom, it is thinking from Isaac's position.

However, this critique of sacrifice is not the only way in which sacrifice language has been applied to environmental issues. By drawing attention to the indigenous scholar George Tinker, the Appalachian activist Bob Kincaid, Sarah's allusion to a sermon on Christ's cross, and Peter's commitment to the Restoring Eden projects in spite of his health and wellbeing, I already hinted at the presence of a more constructive theory of environmental sacrifice that has emerged from sacrifice zones and sacrificed peoples. Sacrifice zones, though originally conceived as problematic and unjust, have also produced a rival concept of sacrifice that is associated not with victimization but with meaningful action, resistance, hope, love for one's neighbors and non-human creatures, reciprocity, and other notions that coalesce into a vision of life-giving sacrifice:

Some things are worth fighting for and acting on in spite of the costs to oneself. This might be thought of as examining sacrifice from Abraham's position.

How is this positive conception of sacrifice to be understood? Before developing a theological hermeneutic in the next two chapters, it is to a number of constructive theorists of environmental sacrifice in the field of environmental politics that I now turn. Though they have not substantively engaged with the particular concept of a sacrifice zone, nor have they sustained a critique of sacrifice as scapegoating, scholars in the field of environmental politics have nevertheless interrogated, embraced, rejected, and reformulated the concept of sacrifice in environmental thought. Because of its importance in environmental thought and its ubiquity in everyday life, this group of political scientists argues that sacrifice is a concept that scholars must engage, for it is always operating, whether or not it is always understood and visible. These scholars' interest in the theme focuses on the subjective aspects of sacrifice, including matters of agency, the self, meaning, offering, and judgment.

In this section, I survey this literature in environmental politics, briefly examine its multiple positions on the matter of sacrifice, identify its promising trajectories of thought, and argue that the project's constructive potential remains unfulfilled so long as it attempts to ground a theory of sacrifice on a universal foundation, such as a progressive theory of history or a theory of human maturity drawn from developmental psychology. Such a liberal theory of environmental sacrifice is insufficient to understand the (constructive) sacrifices made in Appalachia's and Birmingham's sacrifice zones. Understanding those requires a theological engagement. In other words, the constructive theorists of sacrificial environmental politics attempt to outline a theory of sacrifice founded on liberal foundations and commitments—that is, scientific description and universal humanity—while claiming to not be engaging in theology. I argue that while they rightly point to the need for a constructive engagement with sacrifice, such

a task requires, as Gudynas argues, a theological engagement. In this sense, these scholars of environmental politics raise questions they cannot answer without entering into a theological dispute, or what Karen Litfin attempts to engage as "ontology." Whereas most environmental scholars leave their theological or metaphysical commitments implicit, these scholars of environmental politics show that core environmental concepts are closely related to religious and theological concepts, even if, in their liberal framework, they dissolve religion into metaphysics, human nature, or culture.

This section also serves to situate my project within political theology, even as I seek to expand and revise its categories, for political theology builds upon the insight that political and theological concepts are mutually constitutive and refract one another.[89] To these I add ecological concepts to suggest that talk of God, talk of politics, and talk of nature (ecology) are already mutually constitutive in practice, and that the church's ability to make wise and faithful judgments today is aided by reflecting normatively on the particular ways they refract and interact with one another in concrete contexts. Because I think these three are always in operation at the same time, we should both critique the harmful ways they are mutually constituted and promote other, better ways of relating them.[90]

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[89] Though Carl Schmitt argues that modern political concepts, such as sovereignty, are secularized theological concepts, it is also the case, as Luke Bretherton argues, that the reverse is true: many theological concepts, such as the church (*ekklesia*) and liturgy (*leiturgia*), are theologized political concepts. See Luke Bretherton, *Christ and the Common Life: Political Theology and the Case for Democracy* (Grand Rapids, MI: W.B. Eerdmans Press, 2019), 2-3.

[90] My proposal for an ecopolitical theology that (1) examines existing relationships between theology, politics, and ecology and (2) promotes a substantive, normative account of how they should be related in particular contexts departs from the bulk of political theology, which has not critically examined the conceptions of nature that undergird its accounts of political order. Echoing ecotheology in general, Willis Jenkins observed that Christian political thought has largely treated nature as a platform on which the drama of divine-human relations play out. Willis Jenkins, *Ecologies of Grace*. This almost default view of nature as a platform, or stage, needs to be critically examined in light of ecotheology. As I show throughout the dissertation, critical examination also needs to proceed in the opposite direction, as well, especially since ecotheology has too often blessed the theories of collective action embodied by state- and market-driven environmentalisms.

If, as I hold, political, ecological, and theological concepts are deeply intertwined, we must think beyond the subdisciplinary distinction between political theology and ecotheology and instead develop a more expansive ecopolitical theology. Such a theology thus benefits from sustained engagement with political ecology, on the one hand—which is a critical approach to nature-society studies located primarily in the fields of anthropology, geography, and science studies—and environmental politics, on the other, which is a broadly liberal approach to environmental governance and policy located in political science. Political theology reflects the failure of Western traditions of political thought to acknowledge the degree to which concepts of nature, materiality, and the non-human operate to stabilize and shape political concepts and institutions. Ecological thought and ecotheology similarly fail to account for the ways that natures are both patterned sets of relatively independent forces and produced vis-a-vis social and political relations. These three—politics, ecology, and theology—must be thought together.

Having thus far argued that there is an ecology of sacrifice operating in and upon sacrifice zones that serves to divide places of sustainable abundance from places of concentrated harm, a number of political scientists theorize a rival, positive ecology of sacrifice that also bears on these sacrifice zones.

John Meyer identifies three broad positions on sacrifice in environmental politics. The first associates sacrifice with altruism and austerity, making do with less, decreasing one's ecological footprint, and denying one's self-interest in the name of a greater good, such as a sustainable future or a planet characterized by biodiversity. This position was largely associated with the conservationist and preservationist approaches to environmentalism that dominated the movement from the nineteenth century to perhaps the 1980s and '90s, including its misanthropic versions in deep ecology. It has also been furthered by the planetary turn in more contemporary environmental thought. Perhaps its most well-known contemporary representative is Bill

McKibben, who uses an apocalyptic style of communication to alarm and shock people into changing their lifestyles to reduce their ecological footprint, a position exemplified by the title of his book *Maybe One: A Personal and Environmental Argument for Single Child Families*.[91] According to Meyer, this position is driven by despair and tends to favor elitist, top-down politics that impose restrictions and restraints on an unwilling populace. In its extreme form, it calls for humanity to withdraw from nature, drawing attention, for instance, to population as the cause of environmental crisis. The case of McKibben, however, also points to its manifestation as a social movement that aims to make austerity and frugality a widespread virtue.

The second position on environmental sacrifice emerged as a reaction to this politics of austerity by denying the need for sacrifice at all. As with the first position, it also largely associates sacrifice with altruism; unlike the first position, it rejects founding environmentalism on self-sacrifice, and embraces either an Ayn Rand-style egoism or, more commonly, a sacrifice-free faith in human ingenuity. With seeds in the 1980s, it has come to fruition in the opening decades of the twenty-first century. This approach seeks to solve environmental problems without any fundamental change in human morality, spirituality, or social relations.[92] It is variously called "environmental optimism," "Promethean environmentalism," or "ecomodernization" (and similar cognates) in order to name its faith in economic, entrepreneurial, techno-scientific, or policy mechanisms and practices to solve present environmental problems. In this view, there is no need to give up goods, change present lifestyles, or deny one's needs and desires. What is needed, rather, is better design, a "politics of possibility," "natural capitalism," geoengineering, and/or

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[91] Bill McKibben, *Maybe One: A Personal and Environmental Argument for Single Child Families* (New York: Simon & Schuster, [1998] 2013).

[92] My use of the term "spirituality" in this section is intended to signal what I take to be theological matters, but which are treated in this literature under the headings of metaphysical, ontological, ideational, or spiritual matters. These scholars' reticence to explicitly engage theology is understandable, given that they are political scientists, they are not trained in religious studies, and such engagements would probably not be well received by their guild.

other economic and technological investments in smarter ways of living.[93] It is important to note that this second position does not deny the reality and extent of environmental problems. Rather, it is defined by an optimism that human beings already possess the necessary knowledge, creativity, technical know-how, and practices to effectively respond to real environmental problems without having to surrender anything of value. In other words, consumption and sustainability are not inherently a zero-sum game. In sum, these environmentalists interpret environmental challenges in purely technical, policy, and economic terms, not in moral or ontological terms. Environmental problems are understood as opportunities to unleash human powers, not as a challenge to moral commitments and modern ontology (or theology).

The third position is an alternative to both sacrifice-as-austerity and sacrifice-free optimism in that it seeks to valorize a revised politics of sacrifice while also affirming some role for technology and policy. According to this position, a positive, constructive concept of sacrifice—what Karen Litfin calls "a life-affirming perspective on the politics of sacrifice"—is necessary for sustainable environmental governance.[94] Committed to democratic principles, this position rejects the authoritarian, top-down politics of the austerity approach and accepts some of the second position's critique of sacrifice. Yet, unlike the anti-sacrificial position, it recognizes that sacrifice is ubiquitous in modern societies, especially when one's values and moral

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[93] For the design argument, see William McDonough and Michael Braungart, *Cradle to Cradle* (New York: North Point Press, 2002); for the "politics of possibility," see Ted Nordhaus and Michael Shellenberger, *The Death of Environmentalism* (Environmental Grantmakers, 2004), accessed May 7, 2020, [h…]://s3.us-east-2.amazonaws.com/uploads.thebreakthrough.org/legacy/images/Death_of_Environmentalism.pdf; for the argument in favor of natural capitalism, see Paul Hawken, Amory Lovins, and L. Hunter Lovins, *Natural Capitalism: Creation the Next Industrial Revolution* (New York: Back Bay Books, 2000); another account is given by J. Paul Kelleher, "Is There a Sacrifice-Free Solution to Climate Change?," *Ethics, Policy, and Environment* 18, no. 1 (2015): 68-78.

[94] Karen Litfin, "The Sacred and the Profane in the Ecological Politics of Sacrifice," in *The Environmental Politics of Sacrifice*, eds. Michael Maniates and John M. Meyer (Cambridge, MA: MIT Press, 2010), 117.

commitments, such as free choice and sustainability, come into conflict.[95] Though its proponents formulate their constructive theory of environmental sacrifice differently, they agree on the need to engage positively, critically, and constructively with the concept of environmental sacrifice for moral, political, and spiritual reasons. Failing to do so means simply rendering invisible the kinds of sacrifices already being made in practice as well as continuing to make those sacrifices unreflectively, often with unjust and unsustainable outcomes. In this sense, they also all develop a hermeneutical distinction between genuine and false sacrifice.

Though Meyer only identifies these three positions on sacrifice in environmental politics, I suggested in the previous section that there is perhaps another position, represented by political ecology, that shares some elements of position two but draws a different conclusion. It is critical of the concept of sacrifice, but for very different reasons: Sacrificial reasoning has been used to rationalize the concentration of environmental harms in particular places. Yet this position is also critical of optimistic faith in human powers to overcome those patterns of sacrifice. The solution to sacrificial environmentalism is not faith in technology or economy but social and environmental justice that eliminates the need for sacrifice, understood negatively as victimization and scapegoating. I also noted that within this position, there is a largely inchoate gesture toward a more positive conception of sacrifice, thus sharing some affinity with position three. As I intend to make clear, however, its moral and political commitments differ from the largely liberal and middle-class commitments that orient the third position.

Since the third position is closest to the concern of this dissertation to draw out the constructive potential of political ecology, it is worth examining more closely. John Meyer, Karen Litfin, Paul Wapner, Cheryl Hall, and Michael Maniates all critically and constructively propose

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[95] Some examples of mundane sacrifices are parenting and taking the everyday risk of driving in a car.

an environmental politics of sacrifice that resists both a politics of austerity, loss, and deprivation, on the one hand, and an anti-sacrificial politics of optimism and sacrifice-free abundance, on the other.[96] According to Meyer and Maniates, even if sacrifice is not embraced, it is a term "we must *confront and engage*."[97] One reason so many environmentally minded scholars, public leaders, and activists have avoided the term in recent decades is because its "conceptual slipperiness," including its associations with premodern religions and issues of loss and deprivation, makes it a "minefield."[98] However, as Litfin argues, "sacrifice has not disappeared in rationalized societies; it has merely gone underground." And, because it "is ubiquitous but largely unconscious," scholars ought to "uncover its dynamics and its manifestations" in everyday life and apply it to environmental concerns.[99] A positive view of sacrifice, in other words, should stress its everyday character, not its exceptional, self-sacrificial heroism (e.g., martyrdom). Beyond its invisible ubiquity, the concept of sacrifice is important because it also signifies the unavoidable moral, political, and spiritual dimensions of the environmental crisis in a world defined by ecological limits and the need to navigate competing values.

These scholars converge on a set of shared critiques and constructive proposals. First, they critique anti-sacrificial environmental politics for having a reductive technical and materialist interpretation of environmental problems and solutions. They critique the idea that no sacrificial moral or lifestyle change is required to address environmental challenges. Second, they

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[96] For an analogous argument from a comparative religious studies perspective, which draws on the "Mediterreanean" (a synthesis of Judeo-Greco-Christian-Muslim models) and "Indic" models of sacrifice to promote a new model to combat consumerism's unsustainability, see Christopher Key Chapple, "Sacrifice and Sustainability," *Worldviews* 12 (2008): 221-236.

[97] John M. Meyer and Michael Maniates, "Must We Sacrifice?: Confronting the Politics of Sacrifice in an Ecologically Full World," in *The Environmental Politics of Sacrifice*, eds. Michael Maniates and John M. Meyer (Cambridge, MA: MIT Press, 2010), 6 (emphasis original).

[98] Michael Maniates and John M. Meyer, "Conclusion: Sacrifice and a New Environmental Politics," in *The Environmental Politics of Sacrifice*, eds. Michael Maniates and John M. Meyer (Cambridge, MA: MIT Press, 2010), 313.

[99] Litfin, "The Sacred and the Profane," 119.

converge on affirming the goods that sacrificial practices can unleash, such as a greater sense of meaning, holistic interdependence, cosmic participation, democratization, or happiness. Third, they also share a critique of the altruism-egoism dichotomy—and the Hobbesian anthropology it implies—underlying both austerity and sacrifice-free environmentalisms, arguing instead for aligning sacrifice with Tocquevillian and feminist notions of "self-interest properly understood."[100] In this view, genuine sacrifice enlarges and enriches—it does not efface or deny—the self. In other words, sacrifices are aimed at growth, not deprivation. Fourth, these scholars all define sacrifice in what they identify as "secular" terms, which can otherwise be understood as universal terms, as a kind of exchange: giving up a good, or something of value, for a higher good or a more pressing claim.[101] They argue that religious conceptions of sacrifice, such as making an offering to a deity that establishes a flow of communication between oneself and forces beyond the self, are to be understood as a specification of this more general, universal definition. Such an account of sacrifice, however, does not prevent these theorists from distinguishing between genuine and misguided forms of sacrifice. The former are variously called genuine, true, voluntary, or authentic, while the latter are identified as false, misguided, involuntary, or victimizing. Litfin, for instance, argues that "rather than engendering a sense of limitation and constraint, true sacrifice is a gift that enlarges the giver by linking him or her to forces and wider circles of identification beyond his or her ordinary sense of self."[102] She thus develops a hermeneutic that contrasts genuine sacrifice with a counter-productive, self-effacing form of sacrifice concerned with guilt, self-abnegation, and compulsion. Hall similarly identifies

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[100] John M. Meyer, "Sacrifice and the Possibilities for Environmental Action," in *The Oxford Handbook of Environmental Ethics*, eds. Stephen M. Gardiner and Allen Thompson (Oxford University Press, 2018), 545.

[101] It is not clear to me that this definition of sacrifice is different in kind from a utilitarian logic of sacrifice.

[102] Litfin, "The Sacred and the Profane," 119.

as “true sacrifices” acts of voluntarily giving up something of value “for the sake of” something with a higher value, whereas involuntary sacrifices, or self-denying acts, are not to be thought of as sacrifices at all, but are rather something else, such as coercion or deprivation.[103] For all of these theorists, a loss or decrease of self is anathema to an account of genuine environmental sacrifice. A genuine sacrifice is one that is voluntarily chosen and self-enriching.

One final point of convergence is that these scholars all construct their positive theory of sacrifice on naturalistic accounts of the self and developmentalist-psychological conceptions of growth and maturity. They naturalize some forms of sacrifice as right and good in contrast to other forms of sacrifice that are wrong and bad. Religious forms of sacrifice, in this view, tend to be either relegated to the wrong side of the hermeneutic or superseded by liberal values in an evolutionary framework. For instance, Litfin appeals to a progressive theory of history to argue that sacrifice evolved from a primitive ritual to an inner attitude to liberal cosmopolitanism to what is now emerging as an ecological sense of belonging to a “participatory universe” in a “holistic ontology.”[104] In this framework, morality develops from primitive rituals with gods into liberal values that might be associated with any or no religion. Wapner similarly draws on developmental psychology to distinguish between “environmental immaturity,” which he associates with technocratic, Promethean environmentalists, and the sacrifice-driven “environmental maturity” of a morally oriented environmentalism that, by learning to flourish within its biophysical limits, seeks to extend its care for others (across time, space, and species).[105] The Prometheans’ “have-it-all environmentalism” is, like children, immature, while

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[103] Cheryl Hall, “Freedom, Values, and Sacrifice: Religion, Everyday Life, and Environmental Practice,” in *The Environmental Politics of Sacrifice*, eds. Michael Maniates and John M. Meyer (Cambridge, MA: MIT Press, 2010), 63-64.

[104] Litfin, “The Sacred and the Profane,” 123-24, 126-27.

[105] Paul Wapner, “Sacrifice in an Age of Comfort,” in *The Environmental Politics of Sacrifice*, eds. Michael Maniates and John M. Meyer (Cambridge, MA: MIT Press, 2010), 46, 48, 50.

self-limiting environmentalism that expands care temporally, spatially, and across species is mature. For their part, Meyer and Maniates also challenge their fellow environmental scholars to consider a "more *adult* environmental politics" that confronts, and does not evade, the notion of sacrifice.[106]

My point in drawing attention to this developmental theory of sacrifice is to show the inadequacy of trying to construct an environmental norm from naturalistic descriptions of human development. These scholars attempt to construct a liberal theory of environmental sacrifice that turns on the distinction between ignorance and awareness, immaturity and maturity. According to Litfin, the problem besetting sacrifice is that we tend to be unaware of what we are sacrificing as a consequence of our consumption, but "when blissful ignorance is sacrificed on the altar of awareness and integrity, the ensuing sense of wholeness and connection may offer unanticipated gifts."[107] The problem is construed in intellectualist terms as ignorance, and the redemptive path proceeds by way of education to "see[ing] the bigger picture" of the cosmos and then making sacrifices that help one to participate in it.[108] Or, as Wapner argues, the problem is construed as immaturity, a denial of the limits within which freedom can prosper, and the redemptive pathway is to embrace self-limitation as a virtue, akin to Wendell Berry's notion of frugality. In either case, sacrifices enlarge the self not by an increase in consumption but by an increase in meaning, spirituality, cosmic belonging, or maturity.

These scholars' turn from a dichotomous conception of environmental politics that stresses either self-denying austerity or sacrifice-free abundance toward a more complex, constructive theory of environmental sacrifice is commendable. However, the limitation of this liberal view is that it is constructed from a voluntaristic understanding of freedom and naturalistic

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[106] Maniates and Meyer, "Conclusion," 319 (emphasis original).
[107] Litfin, "The Sacred and the Profane," 134.
[108] Ibid., 139.

accounts of the self, growth, and religion. And while some of these scholars critique anthropocentric ways of ascribing value to the non-human world, they nevertheless try to accommodate such an anthropocentric theory of value to a more expansive paradigm. Their evolutionary accounts of history and human development subsume the self-descriptions and practices that have emerged within sacrifice zones to universal categories. Their theory can affirm particularistic accounts of sacrifice only by correlating them with a generalized, ethical account of sacrifice in which the element of a god, gods, or sin is epiphenomenal. Sacrifice is fundamentally about voluntarily exchanging lesser goods for higher ones. In this approach, the distinction between good and bad sacrifices mirrors the distinction between liberal and anti-liberal ethics and politics. Sacrifice is a kind of exchange in which the desire for lesser, seemingly more urgent goods is restrained for the sake of greater, more holistic and planetary goods. As in Meyer's account, giving up particular goods in the short term is motivated by the bargain or hope for greater goods in the long run, especially for not-yet-existing forms of life in the distant future. The goal of deliberation, in this view, is to get the hierarchy of value right, or rather to learn an ecologically sophisticated way of attributing value to things, and then align it with the sciences of sustainability that can be used to project the likely outcomes of sacrificial actions. Alternatively, in the more metaphysical accounts given by Litfin and Wapner, sacrifice is a way of becoming a member of and communing with a larger community of life. When one voluntarily chooses to give up goods and instead accepts life within ecological limits so that other human and non-human beings might simply live, this sacrificial act increases one's participation in the land or the cosmos in such a way that it brings happiness or self-growth and maturity.

Is this an adequate account of the (positive) sacrifices that emerge from sacrifice zones? I think it ultimately falls short. I have noted that the kinds of sacrifices that emerge from sacrifice zones are not primarily associated with liberal conceptions of human freedom as choice, planetary

moral commitments, and balancing values of consumptive pleasure and sustainability. Sacrifice zones are sites of structurally constrained agency, where a voluntaristic notion of freedom as choice fails to make sense. Sacrifice is also not about learning ecologically enlightened modes of attributing value to things, but rather about speaking, discovering, and living into what is true about a place. It is not primarily a calculated exchange; it is about the quality of one's relations with others, the land, and even God. It is also a response to a world that is in some way deeply affected by sin and evil, which is to say that the path to genuine sacrifice is not education and awareness but rather involves something more fundamental, like conversion or the healing of one's sinful attachments to death-dealing forms of practice. And while I do not think it is accurate to overdetermine these sacrifices by the concept of martyrdom, they do at least risk something like martyrdom, including reputation assassination and legal forms of intimidation, as one possible outcome of sacrificial action.[109]

In sum, theorists of a sacrificial environmental politics rightly note the centrality of the concept and practice of sacrifice for environmental action. However, they are unable to sufficiently answer the questions they raise, in part because they do not attend closely to how the sacrifices that emerge from sacrifice zones challenge their theories and in part because they dismiss the theological dimensions of sacrifice as epiphenomenal. They affirm that talk of politics and talk of nature are co-constitutive, but they attempt to construct a theory of sacrifice without talk of God, which can instead be dissolved into talk of nature or politics. However, animating the present study is the phenomenon that people in the sacrifice zones of Appalachia and Birmingham interweave talk of God with talk of nature and politics. In the fifth chapter, I challenge even these distinctions between nature and politics as I examine what it means to do science today.

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[109] These sacrifices will be explored further in the following chapters.

Conclusion

The preceding two sections on the genealogy of a sacrifice zone and constructive theories of environmental sacrifice demonstrate that sacrifice is not only a central concern for Sarah and the Restoring Eden projects; it also resonates with wider debates in political ecology and environmental politics. This suggests that a close analysis of how Restoring Eden navigates these matters might, in addition to aiding Christian practical reason, inform these wider debates. On the one hand, political ecologists who use the concept of a sacrifice zone primarily develop a critical theory of sacrifice while maintaining a focus on the objective aspect of sacrifice—the thing sacrificed, the victim of violence or injustice, the scapegoat, the recipient of a sacrificial act. Environmental politics scholars, on the other hand, constructively develop the concept of an environmental sacrifice by focusing on the subjective aspects of sacrifice—matters of agency, meaning, and the distinction between genuine and malformed sacrifices. These two developments remain distinct from one another and have not been examined together. However, my case study of Restoring Eden suggests there is much to be gained from such a joint analysis.

The descriptive argument of this chapter is that the places where Restoring Eden carried out its health studies are best described as environmental sacrifice zones. In addition to fitting the evolving concept of a sacrifice zone, this is also how Sarah describes Appalachia and Birmingham. Furthermore, though Peter does not use the language of sacrifice, I have argued that the concept is fundamental to Restoring Eden's theory and practice of citizen science. It is oriented toward speaking truth in extracted places and becoming a neighbor to those who invisibly bear the true costs of coal. What is more, I have argued that these sacrifice zones are sites of contestation between rival political ecologies of sacrifice, where different ways of talking of God, nature, and politics come into conflict. Though I have foregrounded the concept of

sacrifice, this is not the only thread that binds politics, ecology, and theology together. For instance, the concept of creation does so as well. However, the concept of sacrifice fits the existential urgency that characterizes action in the sacrifice zones that are the object of my research. Sacrifice brings to the fore existential matters of life and death, life through death, and the life-giving or death-dealing patterns that are constructed by different kinds of sacrifice. While Meyer laments sacrifice's "conceptual slipperiness," I seek to work constructively with its generative excessiveness. Because we are unable to fully grasp such an excessive concept, there is a tendency among theorists to stabilize the concept in order to either embrace or reject it. However, in the next two chapters, I propose instead to think with the concept's excess and urgency, especially as it relates to the excessive act of Christ dying on the cross. Because that act also troubles our capacity to think, it too is prone to stabilizing reductions that either tame or reject it as a fundamental concept for Christian faith and life.

Chapter 3. Examining Blood, Soil, and Belonging in Extractivism's Slow Sacrifice Zones

You have this extractive industry that takes what's valuable and removes it. … It's the definition of a resource curse.

- Michael Hendryx[1]

This is the essential point. Violence in the appropriation of natural resources, extracted by trampling on human rights and the rights of nature, "is not the consequence of a type of extraction but is rather a necessary condition for being able to carry out the appropriation of natural resources."

- Alberto Acosta[2]

In the Book of Revelation, there's a scripture that says that God will destroy those who destroy the Earth. We're breaking a covenant with God. We're breaking a covenant with Creation and with other people and with future generations. It is a sin. Sin's not a word that is popular today, but that's what it is. Sin.

- Allen Johnson, Christians for the Mountains[3]

Woe to them! For they walked in the way of Cain.

- Jude 11

Is a world without sacrifice zones imaginable? Can we conceive of abundant life apart from the ways of life that routinely sentence others' lives and lands to death? These questions beg some prior ones. How did we create a world in which the existence of sacrifice zones appeared a necessary, if lamentable, aspect of human flourishing? And how should we understand this world of expanding, intensifying, and multiplying sacrifice zones? Only by answering these latter

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[1] Michael Hendryx, the lead scientist for the Restoring Eden health study projects, quoted in Clayton Aldern, "Mountaintop removal country's mental health crisis," *Grist*, Feb. 17, 2016, accessed June 25, 2016, [h…]://grist.org/climate-energy/mountaintop-removal-countrys-mental-health-crisis.

[2] Alberto Acosta, "Maldiciones, Herejías y Otros Milagros de la Economía Extractivista," *Tabula Rasa* 24 (Jan-Jun 2016): 38 (my translation).

[3] Allen Johnson is the co-founder and director of Christians for the Mountains, the West Virginia-based organization that partnered with Restoring Eden to organize the health studies. This quote about mountaintop removal coal mining comes from an "Transcript of 'Is God Green?'," Moyers on America, PBS, accessed September 16, 2019, [h…w].pbs.org/moyers/moyersonamerica/print/isgodgreen_transcript_print.html.

questions can we begin to imagine what a world without sacrifice zones might look like and to consider the kinds of practices that might help to move beyond what I will argue in this chapter is an extractivist ecopolitical theology that is constituted by false sacrifices, that is, by dis-membering other creatures from the community of life in order to secure one's own life and control the future.

In this chapter, by examining extractivism as an ecopolitical theology of false sacrifice, I begin to construct a theological hermeneutic to aid Christian ecopolitical witness. The hermeneutic is formed by attention to the particularities of my case study, but I contend that it has a more general relevance due to the patterns of extractivist political ecologies around the world. My critical analysis in this chapter gives way to a constructive ecopolitical theology of sacrifice in the next chapter, which takes as its point of departure the priestly work of Jesus Christ.[4] These two chapters comprise a critical and constructive hermeneutic. It stems from examining the fact that after Restoring Eden's Birmingham team visited the Equal Justice Initiative's (EJI) museum and lynching memorial in Montgomery, Alabama, Peter began calling Restoring Eden's work "citizen science as restorative truth-telling." The phrase, inspired by EJI's work on community remembrance, foregrounds the concept of membership—belonging. But, as I will show, it does not refer merely to membership in human societies. In Restoring Eden's account, it also invites us to consider our membership in the community of creatures, which is also, through its participation in the divine economy of creation and salvation, the community of life. Restoring Eden's phrase

[4] Though I give a fuller account of Christ's priestly office in the following chapter, it is sufficient here to note that theologians, particularly though not exclusively in the Protestant tradition, frequently reflect on the significance of Jesus Christ by examining how New Testament authors portray him as assuming and fulfilling three offices, or roles, in Old Testament Israel—the offices of prophet, priest, and king—each of which is associated with a distinctive range of persons, practices, and images.

invites us to develop re-membering practices that weave together blood, soil, and belonging into a political ecology of life.[5]

My theological critique of extractivism in this chapter culminates in my thesis that if extractivism is a political ecology of false sacrifice, then any movement beyond it will require divorcing our conception of life—abundant, flourishing, sacred life—from an extractivist political ecology that secures and prolongs (some) life by sentencing other lives and lands to death.

The chapter unfolds with a scene from my fieldwork when the Restoring Eden team visited EJI's museum and lynching memorial in Montgomery and an account of its significance for the present chapter. Then, I connect Peter's call to creation care during his six-month trek through the Cascades to my examination of Sarah's story in the previous chapter, arguing that Restoring Eden's citizen science projects are the latest iteration of Restoring Eden's original mission to respond to the dis-memberment of creatures with truth-telling practices aimed at re-membering them to the community of life. In the third section, I summarize the analysis of *extractivismo* theorists who argue that, more than merely a political ecology, extractivism ought to be understood as an "ecopolitical theology." Finally, I bring *extractivismo* theory into conversation with my analysis of dis-memberment to theologically critique extractivism as a species of false sacrifice. I do so by ecologically adapting Augustine's two-cities motif as an aid to Christian ecopolitical analysis: As Augustine saw in Cain and Christ the founders of two cities, I find in them the founders of two political ecologies, or soil-cities. While the former is my focus here, unfolding a political ecology founded on Christ's one true sacrifice for sin is the subject of the next chapter.

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[5] Against the conventional meaning of the qualifier "citizen" in "citizen science," my account in this chapter and the next associates "citizen" not with the concept of the "non-scientist" but with the concept of citizenship, or membership, in the community of life. Scientific truth-telling, in this account, is "restorative" when it re-members dis-membered creatures.

As sacrifice is a concept central not only to environmental thought, but also to theology and social and political theory, it is a concept through which to examine these topics together. By centering the concepts of environmental sacrifice and sacrifice zones in this dissertation, I am thus situating this ecopolitical theology as a response to two sacrifices: the false sacrifice of God's creatures ("the way of Cain") and Jesus Christ's one true sacrifice for the salvation of creatures.

This emphasis on sacrifice is also intended to correct an almost singular focus on violence in environmental justice literature. As demonstrated in the previous chapter, the concept of a sacrifice zone developed alongside and in tandem with the notion of environmental racism and injustice. The environmental justice movement, however, has primarily foregrounded the notion of violence, as in Rob Nixon's concept of "slow violence," which conceptualizes the circulation of power and pollution through ecological flows. (The epigraph by Alberto Acosta is another case in point.[6]) Nixon's "slow violence" is "violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space … [that] is neither spectacular nor instantaneous, but rather incremental and accretive."[7] Through "slow violence," Nixon sought to overcome a representational challenge: Because temporal and spatial dispersions render slow violence nearly invisible, it is challenging to represent and respond to it. Confronting slow violence "requires … that we … give figurative shape to formless threats whose fatal repercussions are dispersed across time and space"; it also requires that we develop "creative ways of drawing public attention to catastrophic acts that are low in instant spectacle but high in long-term effects."[8] Nixon hopes that by conceptualizing these slow-moving dynamics as

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[6] Acosta, "Maldiciones, Herejías y Otros Milagros," 38.

[7] Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011), 2.

[8] Ibid., 10.

instances of violence, scholars and activists might more effectively catalyze responsive collective action to contest them. Though my analysis throughout this dissertation is indebted to Nixon's work on this representational challenge, an alternative way to understand my argument in this chapter is nevertheless as a corrective to Nixon's concept of slow violence. For violence is a morally underdetermined concept. Warfare, a police execution, surgery, a mother tackling her child before an onrushing vehicle; all are instances of violence, but not all of them should be prevented. Rather than slow violence *per se*, the dynamic is better described as slow sacrifice, or more precisely, slow false sacrifice. The god at work here menacing the Lord's purposes, at least according to the Old Testament tradition, is not Marduk, the one who makes the wind his weapon in a cosmic battle, but Moloch, the god who demands child sacrifices.

The key idea—drawn from theological, political, and environmental studies—is that sacrifices (true or false, good or bad, moral or ritual) bind human and otherkind creatures together into particular patterns of relation. I explore how different kinds of sacrifices bind creatures together differently in contrasting political ecologies that, during this secular time, are intermingled in history.[9] Interpreting between true and false sacrifices, and the unique political ecologies they constitute, is an essential element of environmental practical reasoning. My aim is to distinguish between these sacrifices by attending to witnesses—Scripture, tradition, and living practical reasoners—so as to aid deliberation about how to address the real ecopolitical problems we human creatures confront in time. Faithful Christian existence and action in time needs such a hermeneutic for distinguishing the kinds of sacrifices that bind creatures together into political ecologies of death from the forms of speech and action that bear witness to Christ's life-giving sacrifice.

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[9] The word "secular" here refers to its theological meaning, as non-eternal time, as in Augustine's *saeculum*.

Sacrifices are binding. But different sacrifices bind persons, otherkind creatures, and God/gods in different ways.[10] This difference is the primary object of these central chapters. What holds these chapters together is a normative conception of truth-telling, or bearing true witness, as a fitting response to the kind of false sacrifices that produce sacrifice zones. These chapters on a hermeneutic of sacrifice situate the final chapter on science within a framework of connection: If sacrifices bind together political ecologies, then how are scientific practices and ways of knowing enmeshed within these rival political ecologies of sacrifice?

I. Restoring Eden Visits the Black Belt

"It's what we call restorative truth-telling," Danielle says, as she sums up her work with the Equal Justice Initiative's community remembrance team.[11]

A dozen of us involved in the Birmingham health study drove ninety miles from Birmingham's Appalachian landscape down to the Black Belt's flat, hot, and humid heart in Montgomery. We're sitting with Danielle in the upper room of the EJI building in the city's sleepy downtown. She's helping us debrief our visit this morning to EJI's new museum around the corner.

EJI holds press conferences and staff meetings in this auditorium, which is why I'm so struck that covering every inch of the wall to my right, a space as long as a school bus and two stories high, there are gallon-size clear glass jars filled with soil—some light and sandy, some dark and moist, some red with iron. On each jar is a name, a date, and a county. Danielle explains that each jar was filled with soil by a small team that visited a lynching site in Alabama to

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[10] Talk of "binding" persons and things together through sacrifice is covenantal language.
[11] Fieldnotes, 7/8/18. Danielle is a pseudonym.

remember the lynched. EJI displays them in the museum and in this auditorium. She says the idea was inspired by the piles of shoes in Holocaust museums.

Like those shoes, this soil talks.

It testifies about a mob that killed a man, a woman, a child. It saw a sheriff there, the town mayor, a preacher. As my senses get fixated on this wall of soil, I see in each jar a face contorted. I hear a scream, a prayer, a last testament. I feel someone shaking with terror in the woods. I'm struck by the reality that this soil knows something as old as Cain and Abel, as contemporary as Trayvon Martin and George Floyd.

The jars of soil in this auditorium are shouting so loud I can't hear Sarah's question to Danielle about burnout, or Aubrey's about strategy. All I hear is Abel's blood crying out, unearthing itself again, demanding vengeance for this fratricide.[12] It denounces all the injustices spinning out from that field east of Eden.[13]

But as Danielle's voice draws me back, I realize that Abel's cry is not the only sound filling the room. Reverberating within Danielle's words about "restorative truth-telling" and "remembering" the dead, I hear the "blood of Jesus speaking a better word than the blood of Abel."[14] And I focus in.

We're talking about remembering the lynched in the very building where their mothers and fathers were bought and sold. During the domestic slave trade preceding the Civil War, this was a warehouse for slaves awaiting their sale on the auction block. Most arrived by boat along the Alabama River, a hundred yards from here, a mere supply of labor-goods moving southward to meet burgeoning demand from white planters attracted to America's newly acquired Black Belt and its dark, moist soil that stretched from Georgia to Mississippi. The region's name

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[12] Genesis 4:10: "The voice of your brother Abel's blood is crying to me from the ground."
[13] Hebrews 11:4: "Though Abel died, he still speaks."
[14] Hebrews 12:24.

contains its political ecology of slavery: The Black Belt now refers both to a geological feature of the land—the initial draw for planters who, having largely exhausted the soils of the Upper South, sought new land for cotton plantations—as well as to the large African American population that still inhabits the region. White agriculturalists moved to the geological Black Belt for its rich, black soil, bought Black enslaved people from Virginia and the Carolinas to work it, and created a demographic Black Belt that about a hundred years later birthed both the civil rights and Black Power movements.[15] The Black Belt has been a formidable, complicated ecopolitical agent: It formed the slave, the slaver, and the liberator.

Today, though, this EJI building is the headquarters of an organization that gained national attention for its efforts to end capital punishment and reform the criminal justice system. Bryan Stevenson, EJI's founder, wrote a memoir, *Just Mercy*, now adopted by many colleges and universities as their common book and turned into a hit movie. In it, Stevenson personalizes death-row inmates, telling their stories alongside his own in a culminating argument that our justice system is broken. Our system is narrowly penal, accepts the incarceration of innocent people, and tends to maintain a racially stratified social order; in a word, it's unjust. For him, mercy is the catalyzing agent for a better justice. The book is Stevenson's vision of restorative justice in the U.S. And it has found a receptive public.

But we're here visiting EJI today because Peter asked me to arrange a trip to help the Birmingham team "have some epiphanies." I felt the pressure of that tall order. He wanted to set aside space and time for our diverse group to find a narrative of the region's racial history in which to root the health study. And since I'd been talking up EJI's work to him since I first

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[15] Rosa Parks and Martin Luther King, Jr. were both residents of Montgomery, the heart of the Black Belt. The Selma to Montgomery march took place entirely in the Black Belt. The Black Power movement and the first black panther logo to symbolize it both originated in Lowndes County, also in the Black Belt, which sits directly in-between Selma and Montgomery.

visited a few months ago, he put the trip in my hands. I met Danielle during my first visit and learned that she had attended Duke Divinity School, where I now study. A young, Black, Christian woman from Alabama with training in theology and health care, who now dedicates herself to telling historical truths to remember the lynched and foster healing: I knew she'd be the right person to guide us, and she agreed to it.

Danielle explains to our group that years ago EJI leaders realized their effectiveness in reforming the criminal justice system depended on their ability to tell a truthful narrative of race relations in the U.S. At every turn, they found powerful myths, theories, and gaps in the nation's historical memory blocking the way to justice reform. So they broadened their work from individual cases and legal advocacy to include historical narrative and memory. They wrote a report on the lesser known domestic slave trade—lesser known compared to the trans-Atlantic trade—and especially Montgomery's prominent role in it. The report filled the historical gap between the abolition of the trans-Atlantic slave trade and the Civil War. In it, they named individual families, banks, and insurance companies—some of which, like Lehman Brothers, are still operating today—that capitalized on this trade. They documented all of the lynchings that took place from 1877 to 1950, even in places as far from the South as Minnesota, West Virginia, and Oregon. They used the data and the photos to inform their new Legacy Museum: From Enslavement to Mass Incarceration. Since it opened last year, so many people have visited that they had to limit the numbers by requiring a ticket and an entrance time. A young, white waitress at a diner around the corner tells me she's never seen so many people walking around Montgomery. "It's usually a sleepy town," she says. "But now folks come from all over. Think maybe I should visit that museum."

The Legacy Museum employs a stunning variety of media and evidence to present a narrative account of American race relations in four historical periods, each one organized around

a constellation of legal and customary practices—domestic slave trade, racial terror lynching, Jim Crow segregation, and mass incarceration. According to the museum, what holds these distinct periods together is a single thread of descriptive falsehood: white life is superior, and black life is inferior. This "elaborate narrative of racial inferiority," as they call it, was with our nation at its founding, and it is still with us today.[16] The museum shows how the proponents of this narrative used science and religion to root this racial theory in both nature and grace and sets this narrative in contrast to an alternative one about the nation's highest ideals of equality and justice for all. The obstacle that stands in the way of the latter is the stain of the former. The museum's designers hold out the hope that not only can this obstacle be removed, but that the act of doing so might itself free perpetrators and victims alike from the demonic-like hold this false narrative has over the nation. Truth-telling might, in a word, restore something deeply broken and remove a powerful falsehood deeply rooted.

Danielle explains that EJI approaches its historical memory work through a framework of truth and reconciliation. She says that before you can effectively address an issue as big as mass incarceration, you need to know about it. You need to know about its history, how it came about, and how it has functioned. "Our work to research lynching in American history and to educate communities about the past is what we call restorative truth-telling. We think that truth," she continues, "is an essential precursor to reconciliation."

As soon as she says it, Peter locks eyes with me, as if to say, "That's it! There's our epiphany! That's exactly what the health studies are for." They, too, are a kind of restorative truth-telling.

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[16] Fieldnotes, 6/9/18.

The task of this and the following chapter is to understand the fact that, after this visit to EJI, Peter changed how he talked about the Restoring Eden health studies in general, even the ones previously carried out in Appalachia. He no longer referred to them as participatory research or even merely as citizen science. What Restoring Eden did thereafter was "citizen science as restorative truth-telling."

This phrase is at the heart of this dissertation's central chapters. The focus of these chapters is "restorative truth-telling" and how it relates to the rival political ecologies operating in the sacrifice zones I began to name in the previous chapter. The focus of this chapter and the next is the "citizen" aspect of restorative truth-telling, addressing matters of belonging and membership, and the fifth chapter examines the "science" aspect.

I examine these in relation to the Trinitarian economy of creation and salvation. Yet a clarification is in order. Whereas theological treatments of the divine economy sometimes move chronologically, as if through stages, from creation to reconciliation to eschatology, this one follows the fieldwork by proceeding outward from the second article of the Creed and understands God's relating to creatures creatively, salvifically, and eschatologically to be a more braided than chronological pattern.[17] Otherwise stated, the unfolding history of God's relating to creation reveals who God is always and everywhere as Creator, Reconciler, and Sanctifier; in

[17] It thus shares, in different ways, both the Barthian sensibility that the Creed should be read from the second article out and David Kelsey's insight that theological treatments of the divine economy ought to address God's three ways of relating to (human) creatures in a braided, rather than chronological, way, for God never ceases to relate to creatures creatively even while reconciling and drawing them into new creation. David Kelsey, "Personal Bodies: A Theological Anthropological Proposal," in *Personal Identity in Theological Perspective*, eds. Richard Lints, Michael S. Horton, and Mark R. Talbot (Grand Rapids, MI: W.B. Eerdmans Press, 2006), 142-49. This is also a way to affirm that the history of God's unfolding economy in time is what is true about the Trinitarian relations in eternity.

Barth's formulation, the election of grace in Jesus Christ is "the beginning of all the ways and works of God."[18]

This Christocentric approach reflects what is at stake in sacrifice zones: Examining sacrifice zones demands that I foreground the existential matters of life and death. These are at the heart of ecopolitical theology because they are at the center of creaturely existence. There is an analogy that needs to be drawn between Golgotha and environmental sacrifice zones because, as the author of the Epistle to the Hebrews put it, "Jesus suffered outside the gate to sanctify the people."[19] Golgotha is the place where, like Joseph's pit, what sinful human creatures meant for evil, God used for good so that many should live.[20] Environmental sacrifice zones are analogous to Golgotha to the extent that they are a complex space where rival economies of sacrifice clash with one another over the true meaning of life and death. In their complexity, sacrifice zones are at once "outside the gate" of the city, out where the dirt and decay are separated from the life of the community, and "in the pit," that is, inside the sacrifice lot, where the damage and decay is meant to be concentrated and walled in to preserve the environs from their pollution. In God's economy, the place of false sacrifice and movement toward nothing is where the greatest exchange takes place: God takes on the creature's death and gives the creature God's life. God inhabits this place in order to move beyond it. Rather than a place to dwell, the sacrifice zone outside the gate is, as Orlando Costas says, a "checkpoint on the way to the new Jerusalem,

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[18] Karl Barth, *Church Dogmatics* II/2, eds. G.W. Bromiley and T.F. Torrance, trans. G.W. Bromiley *et al* (Peabody, MA: Hendrickson Publishers, 1957), 3.

[19] Hebrews 13:12.

[20] Genesis 50:20: "As for you, you meant evil against me, but God meant it for good, to bring it about that many people should be kept alive, as they are today." Though I recognize that this verse, and the concept it renders, has been used to bolster dangerous, distorted theologies of providence that justify death and violence, I agree with James Cone that suffering does not redeem, but faith in the God who snatches life from death does.

symbol of the new creation: the definitive transformation of the world by the power of God."[21] It is, in the words of Karl Barth, where "God wills and demands the man himself, to make an end of him, so that the new man may have air and space for a new life."[22] In their distinctive ways, Costas and Barth articulate that the false sacrifice zone finds its place in the economy of creation and salvation. It is where God gathers up and restores creation's polluted atmosphere and infuses its sin-sickened and defiled creatures with the life-giving power to bear witness in speech and action to their new creation.

This opening scene from Restoring Eden's gathering in the upper room at the EJI office puts the theme of this chapter in perspective: Getting a handle on the relations between blood, soil, and belonging, between theology, ecology, and politics, is both fraught with danger and yet essential for proclaiming the good news of life in Christ. In Protestant theology, and with resonance in patristic and contemporary Catholic theology, this theme is gathered under the heading of Christ's priestly office and anointing. This tradition of reflection on the priestly frame echoes the New Testament's usage of a range of Old Testament figures and cultic practices to interpret Jesus Christ and the entire creation in relation to his personal work as Priest.

This tradition, however, also bears all the marks of being a generative confusion: It has tended to mix both cultic and legal images to shed light on the priestly work of atonement.[23] The generative aspect of this confusion is that it reflects the creative manner in which the New Testament authors wove together images drawn from multiple aspects of social life and Hebrew

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[21] Orlando Costas, *Christ Outside the Gate: Mission Beyond Christendom* (Maryknoll, NY: Orbis, 1982), 193.

[22] Karl Barth, *Church Dogmatics* IV/1, eds. G.W. Bromiley and T.F. Torrance, trans. G.W. Bromiley (Peabody, MA: Hendrickson Publishers, 1956), 280.

[23] John Calvin is a case in point. He is widely recognized as having provided the classic statement of Christ's three offices, a doctrine that would appear to guard against reducing atonement theology to any one controlling theme. And yet he is also the *locus classicus* for articulating a penal substitution theology of atonement within the priestly work of Christ, thus mixing cultic and legal imagery with some profoundly disturbing, and rightly critiqued, consequences. I name some of those further on in this study.

Scripture to speak about Jesus, including images from the law court, temple, medical field, economic relationships, and battlefields. The confusing aspect is that it has often collapsed the other constellations of concepts to the juridical complex of images, and it has done so with very particular notions of justice that made a satisfying death or punishment the pathway to reconciliation and salvation.[24] What is more, this tendency gave rise as well to an antinomian, reactionary tendency to set the cultic and juridical against one another. For instance, one takes up a prophetic stance for justice against the priestly overseers, one is for revolution only by being against sacrifice, for justice against order or reconciliation, for action against prayer, for a structural view of sin's overcoming against an individual focus on forgiveness of sins, for the life or resurrection of Christ against his cross—or vice versa. Adding to the confusion is the fact that contemporary discourse, in contrast to Scripture, tends to mean by "the prophetic" some mix of what the Reformers, echoing Scripture, would have distinguished as the prophetic and kingly (or royal) offices of Christ, that is, the speaking of truth and the execution of justice and liberation, respectively. The legal, cultic, and victory images and the prophetic, priestly, and royal contours of Christ's work are deeply interwoven in Scripture and tradition. However, a more precise distinction between them is nevertheless needed in order to aid Christian witness today. This work of making distinctions, however, is not in order to prioritize one above the other but to better hold them and their tensions together, especially as they complement other metaphors for Christ's work and our human vocation.

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[24] Though Anselm did not develop a penal substitution theology (as Calvin later did), he is rightly remembered for having prioritized juridical images in understanding the incarnation and cross of Christ as a satisfaction for humanity's sin, understood as an offence (a set of concepts drawn from the realm of restorative justice). Even though he stands behind the reductivist tradition I am naming here, it is still important to note that his intention was to seek an alternative to an almost singular emphasis on ransom and battlefield imagery among patristic theologians, which, in his view, failed to elucidate essential aspects of sin and salvation.

Articulating anew the priestly office of Christ today, and therefore our priestly human vocation, must take seriously contemporary critics of sacrifice. As my earlier reference to blood and soil alluded to, natural theologies of sacrifice and atonement have been tainted by one set of horrific problems after another, not the least of which was the movement among German scholars to drain Jesus of his Jewishness, thus paving the way for the German Christian movement to associate Christ's cross with the Nazi swastika, the blood and soil of the cross thus being weaponized as an instrument for purifying German blood and soil from "alien" elements.[25] How does the meaning of the cross as it is revealed in Christ's life and work relate to these natural theologies of sacrifice? That this task of naming the differences and relations between the blood of Christ, the blood of nations, and the blood of the so many falsely sacrificed and lynched is both dangerous and necessary is why James Cone wrote that "The church's most vexing problem today is how to define itself by the gospel of Jesus' cross."[26] This chapter and the next comprise my attempt to address this vexing problem in a way that I hope will do justice to sacrifice's many and righteous critics today.

Can the priestly aspects of Christ's work and human vocation be heard as good news today? Especially if by today we mean this moment when environmental sacrifice zones are expanding, multiplying, and intensifying across the globe? The case of Restoring Eden ultimately helps me to respond in the affirmative. But first, it helps me to develop a theological account of the false sacrifices constituting environmental sacrifice zones as forms of dis-memberment from the community of life. I contend that we should understand these false sacrifices as silencing creatures, cutting them off from wider communicative relations, and cutting them down to their

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[25] See Susanna Heschel's chapter titled "Draining Jesus of Jewishness" in *The Aryan Jesus: Christian Theologians and the Bible in Nazi Germany* (Princeton: Princeton University Press, 2008), 26-66. It is also important to note that the word "Holocaust" means a burnt offering or sacrifice.

[26] James Cone, *The Cross and the Lynching Tree* (Maryknoll, NY: Orbis, 2011), 163.

bare utilitarian value in exclusively human economies. Only against this background can Restoring Eden's practice of restorative truth-telling be seen as giving testimony to a different kind of sacrifice that re-members dis-membered creatures to the community of life.

II. Responding to (False) Sacrifice with Truth-Telling and Re-membering

There is a pre-history to Peter's epiphany in the EJI office that situates it as one important step in a larger story about how Restoring Eden was founded on truth-telling in response to falsehood. By revisiting and reexamining that story from chapter one, I suggest that Restoring Eden's commitment to truth-telling was and is a response to the false sacrifice of extracting, or dis-membering, creatures from God's creation, and that this response aims instead at re-membering them. Even though EJI gave Restoring Eden the language to conceptualize more precisely their approach to citizen science, restorative truth-telling was part of Restoring Eden's practice from the organization's very beginning.[27]

Recall the account in the first chapter about Peter's call to creation care ministry in the middle of a months-long, record-setting llama packing trek through the Cascade Mountains. One eerie, full moon night in Big Crow Basin, Peter was carried into the presence of God when he encountered a herd of elk. The bull elk was bugling to the other bull, signaling his dominance, and behind him was his harem of cows. The "majesty" and "primal nature" of the encounter shocked Peter out of the despondent searching that had propelled him into the wilderness after a decade of pastoring. A lifelong pursuer of authenticity, Peter had found his energizing encounter

[27] Before Peter started using this phrase "citizen science as restorative truth-telling," he would talk about the Restoring Eden projects as "citizen science 2.0" or a citizen science beyond "backyard bird counts." What he meant to convey was that Restoring Eden practiced a kind of citizen science that was closely tied to social and environmental organizing. It was not just citizens involved in scientific data collection but also involved citizens in defining a study's problems and making public use of the findings. This was later encapsulated by a "zipper" metaphor, examined in chapter five, to visualize both the strategic separation and the interaction of scientists and community residents.

with Jesus—his conversion—being slowly suffocated by an inauthenticity among fellow Foursquare Christians that produced too simple answers to life's complex questions.

Peter's encounter with the elk brought him to participate in a new way in a reality that was much larger than himself, perhaps not unlike Job's experience of God's shocking response to his pain: "Where were you when I laid the foundation of the earth?"[28] When Job is trapped in his own pain, God directs him to consider the mountain goats, the wild donkey, the wild ox, the ostrich, the horse, the hawk.[29]

Peter's Job-like, majestic encounter with the elk in all their glory was the immediate backdrop to his lament for their destroyed habitat the very next morning. The forest habitat that had once stretched for hundreds of miles across North America was now crossable by car in an hour, and even that meager stretch of habitat was under threat by an extractive timber industry that was slowly reducing trees to pulp for use in paper and sanitary products.

Together these two moments—the majesty and the despoliation—coalesced into Peter's calling. They provided him with an interpretive context for Proverbs 31:8, which he'd read while sitting on a tree stump that morning: "Speak out for those who cannot speak for themselves." Though many interpreters have read the voiceless to be a reference to poor and oppressed human communities, for Peter in that moment it referred to the elk and every creature threatened by habitat loss in Big Crow Basin. Thinking back to the previous night's encounter with the elk, he realized that he had not only seen the elks' majesty; he'd also heard them communicating to him, asking him to protect their habitat from timber extraction.

But elk that communicate? How could that be? Recognizing how out of sync that is with our sensibilities, Peter pointed to Scripture. "By that time I was reading the Bible and finding

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[28] Job 38:4.
[29] Job 39.

these verses about the earth as singing praise to the creator and declaring the glory of God."[30] This communicative voice of nature was no mere metaphor. This was truly an epiphany, in the sense that Peter uses that word; it was his reorientation toward the world as God's beloved creation. He discovered in the Bible permission to let the otherkind creatures speak, and in particular to speak their word of judgment on clear-cutting, as well as their petition for his aid. The kind of clear-cutting timber extraction that laid waste to entire habitats, by contrast, seemed to require silencing these, the voices of God's creatures, the melodies from this "timbered choir."[31]

I suggest that this silencing of God's creatures—human or otherkind—in order to make them available as an extractable natural resource for human projects is an essential element of the false sacrifices that compose an extractivist economy. Silencing creatures entails cutting off their communicative agency in the divine economy, cutting them out of the web of life-giving communication between God and creation. Restoring Eden was founded in response to the false sacrifice of silencing creatures—elk and trees—in Big Crow Basin.

Even more than this insight about what was being lost, what Peter took away from the communicative encounter was that "The God I love loves nature." And from that point on, Peter resolved "to speak what I think is true about the places I know and love." To underscore the point, he said, "For me activism came because I was fighting for places I knew and I loved." He responded to clear-cutting, a particularly virulent, habitat-destroying form of timber extraction, with truth-telling. Through theological truth-telling he understood himself and his nascent

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[30] Unless otherwise stated, the following quotes come from an interview with Peter Illyn, 7/3/16.

[31] This phrase comes from a poem by Wendell Berry, "A Timbered Choir," in *A Timbered Choir: The Sabbath Poems' 1979-1997* (Washington, DC: Counterpoint, 1998), in which he testifies about what he has seen: "I saw the forest reduced to stumps and gullies … in pursuit of the objective, … which was to clear the way to promotion, to salvation, to progress."

organization as fighting for the places and animals that re-membered him to God's creation, to his own conversion and calling over a decade before, and to his vocation to love what God loves.

In Big Crow Basin, the elk re-membered Peter to the community of creation, and, in hindsight, after seeing their destroyed habitat, he realized that they were calling him to re-member them in return.

The theory of action that emerges here is that of an *oikos-polis*, an ecopolitics, a kinship-activism, or what Peter calls a "cultural" approach to creation care movement-building. This is what the "citizen" aspect of the citizen science health studies refers to. It does not refer to the narrow sense of citizenship—the rights and duties stemming from membership in a modern state—or even primarily to the idea of a lay, non-professional type of science (though it does also refer to this). It refers primarily to membership in a community of God's creation; to belonging to a creaturely community. Entailed in that belonging is a responsibility to tend and keep, that is, to fight to protect its communicative excess beyond the anthropocentric, utilitarian economy. Habitat-destroying forms of extraction threaten to cut off that excess.

As treated in depth in the previous chapter, Sarah also responded to a kind of false sacrifice—the rendering expendable of human lives in sacrifice zones—with a moral form of truth-telling. In her account, the very act of going door-to-door filling out health surveys creates opportunities for "co-humanistic encounters at the doorway." In this way, Sarah also closely associated truth-telling with the power of re-membering fellow human beings to one another. It was "co-humanistic" because it made the conditions in which both the surveyor and the surveyed could become more human to one another. The Restoring Eden organizing team in Birmingham called this kind of work—both Peter's and Sarah's understandings of it—"neighboring."

My exploration to this point raises a question about the sacrifice zone concept. If we use the concept of a sacrifice zone as deployed by the environmental justice movement (as defined

and explored in the previous chapter), only Sarah found her calling in a sacrifice zone. Peter, in contrast, found his calling in a place uninhabited by human beings. It was, in his words, "wilderness," a habitat for wild animal creatures. He says that before Restoring Eden began to focus on the health studies around 2010, the organization largely sought to protect wilderness. Pressed to specify what he meant by wilderness, he rejected the nineteenth-century romanticized ideal of wilderness as an escape from industrial society; a place of wonder, power, and recreation; or a more authentic home for the human than city life. Wilderness, for him, is a place where species are not overdetermined by or for human utility. "Wilderness is a habitat for animal species. Wilderness means that which hasn't been commodified, a tree that's not destined for toilet paper."[32]

Wilderness, for Peter, is a teleological concept that names the ultimate basis of creaturely existence as that which is above and beyond human projects. Stated otherwise, wilderness is wherever creaturely communication is free to exceed what Wendell Berry termed our "little economies."[33] Valuing wilderness need not entail fetishizing some virgin state of existence where "nature" is walled off and protected from "the human"—the ideal manifested by the National Parks System. Rather, it names the limit placed on human interaction with otherkind creatures by their excess, their communicative relations to one another and to the God to which we human creatures have only limited access.

Considering that the predominant conception of sacrifice in environmental issues posits a zero-sum relationship between the environment (or wilderness) and the economy, it is important to note that Peter sees no inherent rivalry between wilderness and economy. In fact, it is quite the opposite. With his degree in marketing, Peter is a lover of creative business enterprises. He

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[32] Fieldnotes, 3/15/18.

[33] Wendell Berry, "Two Economies (1983)," in *The Art of the Commonplace: The Agrarian Essays of Wendell Berry*, ed. Norman Wirzba (Washington, DC: Counterpoint, 2003), 219-35.

regularly admires successful business ventures, even those he thinks are ultimately harmful. Peter even started a few entrepreneurial ventures himself and has a keen eye for craft.[34] His environmentalism is not defined negatively by a disavowal of human use and economy.

In this sense, Peter's view of wilderness and economy is like Berry's understanding of how our little, human economies participate in "The Great Economy." What so horrified Peter in Big Crow Basin and caused him to lament was not the idea of human beings using trees to make things. Rather, it was the devastation and despoliation by which this wilderness was silenced, cut off, and cut down, as if it existed merely for and was determined solely by its use in human economies. Berry's name for this is "the industrial economy." Apart from industrial agriculture, his most frequent example of it is strip-mining. The industrial economy, in contrast to the little economies that participate in The Great Economy, extracts things from every other form of relation except for the human relation that invests it with utilitarian value. In other words, Peter and Berry both affirm that there is no inherent antagonism between wilderness and economy so much as there is an antagonism between two different economies: one that renders everything as potentially extractable matter (as a commodity in potentiality) that is reduced to its instrumental value, and another that treats things by their relation to the divine economy and its forms of membership, care, cultivation, and, when right relations are transgressed, forgiveness and mercy. Human economies are not the problem; their disembedding from a wider, greater Economy is.[35]

But while Berry's distinction might touch the ground with respect to agriculture, it remains too remote in the realm of extractive industries. Restoring Eden helps to make this

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[34] For example, watching him take out a pen is a long, drawn-out process of looking for where he last placed his roll-out leather pen fold, untying it, and studying each hand-carved wooden pen for the right one to meet the moment's need.

[35] Luke Bretherton makes this argument in *Christ and the Common Life: Political Theology and the Case for Democracy* (Grand Rapids, MI: W.B. Eerdmans Press, 2019), 324-28, 345-46. The language of a disembedded economy resonates with Karl Polanyi's critique of free market ideology in *The Great Transformation: The Political and Economic Origins of Our Time* (Boston: Beacon Press, [1944] 2001).

distinction more proximate to natural resource extraction by broadening the concept of a sacrifice zone. In fact, Peter's conception of wilderness expands the notion as it is understood in environmental justice literature. One of Restoring Eden's stickers references Luke 5:16 as teaching that "Your soul needs the wild." This is an interpretive stretch, to be sure, given that the verse describes Jesus going to a desolate, lonely place to pray. It is perhaps more like Delores Williams's concept of "wilderness" as the limited place of freedom within a life-crushing context, a dangerous place that is nevertheless a place of freedom because it is beyond total capture by the master.[36] Can a wilderness—a place not entirely captured by utility, a lonely place where Hagar discovers a semblance of freedom beyond the gaze of her masters—become a sacrifice zone? Yes. Cutting creatures out of the communicative economy of creation is a false sacrifice. Cutting down a creature's habitat, especially without cultivating other forms of habitat for homeless creatures, is a false sacrifice. Big Crow Basin had become a sacrifice zone. It had become a place of creatures' mass dis-memberment.

Because Restoring Eden, as an organization, began and ended its truth-telling in response to the damage caused by natural resource extraction, I contend that their citizen science projects in Appalachia's, Birmingham's, and Chicago's sacrifice zones are best understood through engagement with extractivism theory. Much of the scholarship on Christianity, especially evangelical Christianity, and fossil fuels examines them in terms of climate change theory and its technocratic, statist, policy-driven account of responsible and collective action. However, my analysis of the continuous thread woven from Restoring Eden's founding moment in a site of timber extraction to its citizen science projects in coal and oil's sacrifice zones is evidence that Restoring Eden's approach is more accurately understood in dialogue with extractivism theory.

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[36] Delores S. Williams, *Sisters in the Wilderness: The Challenge of Womanist God-Talk* (Maryknoll, NY: Orbis, [1993] 2013), 96-106.

Their citizen science projects sought to make the invisibilized "true costs of coal" visible in order to contest extractivism's sacrifice zones.

Since its founding moment, Restoring Eden displayed a form of ecopolitical analysis and action that looked not primarily to the hole in the sky but to the holes in the ground, in our societies, and in our hearts.[37] They did not consider it their task to generate the political will to enact policy, economic, and technological solutions to the problems described by climate scientists. In fact, Peter almost never mentions climate change, except for when he critiques other creation care organizations for confusing climate advocacy with environmental organizing.[38] Rather, Restoring Eden rooted science, politics, and environmental action in affective encounters with the human and otherkind creatures struggling to live in our natural resource economy's sacrifice zones.

III. Theorizing Extractivism as an Ecopolitical Theology

How should we understand "the true costs of coal" theologically? In the previous section, I demonstrated that Restoring Eden understood these costs in a theological framework oriented around the concept of membership in a community of creatures. In Peter's case, elk, crows, and his pack llamas in Big Crow Basin played a role in re-membering him to the Creator, and his subsequent efforts through Restoring Eden were aimed at re-membering them in return, particularly through learning to love otherkind creatures and to protect them and their habitats

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[37] By "hole in the sky" I refer to global warming, climate change, and its older conception as a hole in the ozone layer; this hole could also be conceived as the gap popularized by 350.org between 350ppm of CO2 and however many ppm we are currently above that number; either way, the point is that climate change theory invites us to look up. "Holes in the ground" are mining sites and more generally the sites of resource extraction, transportation, refining, burning, and waste. "Holes in our societies" are various forms of inequality and inequity, as in economic gaps between classes, races, genders, etc. "Holes in our hearts" signify the human's need for God and conversion by Jesus Christ and the Spirit.

[38] It should be noted that Restoring Eden most certainly did not "deny" climate science or climate change. This just was not the framework within which they understood their ministry and activity.

from various forms of dis-memberment. I also demonstrated that Restoring Eden never saw human economies—human use of other creatures—as problematic *per se*. The problem rather lay in what can be understood, adapting a concept from Karl Polanyi, as a disembedding of economic relations from a wider set of communicative relations.[39] This is akin to Wendell Berry's notion of The Great Economy. I argued that Restoring Eden's citizen science projects are best understood in continuity with this founding vision to respond to creatures' dis-memberment with affective and restorative forms of truth-telling. And I noted that this focus on dis-membering and disembedding shares more in common with extractivism theory than with climate change theory and the accounts of collective environmental action associated with it.

Building on this analysis of my fieldwork, in the rest of this chapter I broaden my analysis by bringing into conversation the speech and action I observed in my case study with the witnesses of Scripture and theological tradition. I do this in order to name with greater precision the ecopolitical theology that undergirds the intensification, multiplication, and expansion of sacrifice zones today. Though there were undoubtedly sacrifice zones before and beyond the spatio-temporal realm of the modern, their sheer scale and urgency today signal a historical shift that needs to be understood if responsible action is to be taken. Instead of conceptualizing the planetary dimensions of the ecological crisis in terms of climate change theory, I follow the fieldwork in arguing that they are better understood in terms of sacrifice zones and the extractivist political ecologies that produce them. In other words, I contend that extractivism's sacrifice zones are multiplying, intensifying, and expanding to the degree that the entire planet is at risk of becoming one big sacrifice zone. Rather than the hole in the sky menacing creatures on the earth

[39] Polanyi argues that the problem is not markets *per se* but the disembedding of markets from the social relations that hold them accountable to moral limits and natural processes. See Polanyi, *The Great Transformation*.

with acid rain and rising seas, it is the holes in the ground, in our societies, and in our hearts that are impacting the furthest reaches of the atmosphere and the deepest depths of the sea.

I construct this hermeneutic analytically using both field-derived and theological concepts. While I name a number of key intellectual figures and historical events relevant to understanding an extractivist political ecology, this is not an intellectual history. Today's sacrifice zones are more than the product of bad ideas. They are also the product of particular forms of sin and idolatry and the sacrifices caught up in them. In theological idiom, today's sacrifice zones are the product of bad ideas, bad practices, idolatrous material and structural arrangements, and distorted desires; they result from sin and its effects.

Having said that, I resist two opposite moves that this hamartiological framing allows. The first is made by those who theorize the colonial encounter as a pseudo-doctrine of the Fall, complete with its own Dort-like doctrines of total depravity (e.g. even the colonized's minds and memories are damaged), unconditional election (of the subaltern) and limited atonement (for the subaltern and their allies). This approach invests Europeans with god-like (or, perhaps what is the same thing, demonic) power, thus sharpening the issues into a Manichean struggle between good and evil.

The opposite move of universalization affirms that all humanity stands in judgment based on the doctrine of original sin. In the name of universalizing knowledge about the human condition and the totalizing damage sin has unleashed, this theological predilection for examining sin (in the singular) can eclipse the examination of particular sins (in the plural) that might characterize particular eras and places and the patterns of damage they wreak. A universalizing approach may actually allow Europeans to get off the hook, so to speak, for the particular sins they (we) unleashed across the globe. "Oh well," one might say in resignation, "resource colonization is lamentable, and perhaps there are softer forms of it, but such is the way of things

this side of Eden." Yet, as Oliver O'Donovan states, examining sins in their particularity is a constitutive feature of and reason for doing ethics as theology because such examinations offer a descriptive aid to practical reasoning.[40] Yes, sin affects us all, but what are the particular sins that lie before particular groups of people at particular moments in time as tantalizing temptations? I explore extractivism as a sin of this particular sort. At a particular moment in history, and among a particular group of people, extractivism seemed to promise an earthly pathway to salvation—abundant life—for humankind.

Understanding how it is that Restoring Eden's truth-telling and re-membering practices are a response to the false sacrifices of human and otherkind creatures is aided by more precisely naming the character of the false sacrifices they opposed. I do this by first engaging scholars of Latin American political ecology and related disciplines who have named and examined extractivism as an ecopolitical theology that justifies sacrifice and violence through doctrines, rituals, and institutions. For them, extractivism is a diabolical ecopolitical theology that forms the irrational, mythical, and ontological underpinnings of extractive capitalism in the Americas, and it has done so in various ways and stages for the past five hundred years. I then fill out their generative analysis—and move beyond their critique of capitalism and state socialism—with a number of more explicitly theological insights about sin, sacrifice, and extractivism drawn from Scripture and diverse theological traditions.

Scholars of political ecology in Latin America have compiled an abundance of data, discourses, and scholarship on extractive industries across the continent to explore the ways in which religious symbols and mythological stories function as more than merely rhetorical flourishes for the extractive industries that have determined, to a great extent, the history of Latin

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[40] Oliver O'Donovan, *Self, World, and Time: Ethics as Theology, Volume 1* (Grand Rapids, MI: W.B. Eerdmans Publishing Co., 2013), 82-84.

America. For them, the religious language frequently used to describe an extractivist political economy and its consequences by both its supporters and opponents accurately reflects the nature of the profound commitment market, state, and international actors have to a doctrine of growth or progress achieved through the extraction, use, and waste of natural resources. This is what they call, in short, *extractivismo* (extractivism).[41]

Though *extractivismo* theorists argue that extractivism's roots lie in the Spanish conquest, they gave new theoretical attention to extractivism in a particular historical context. That is, after it became clear that the region's neoliberal era was giving way to state-driven forms of economic development that, though championed by anti-neoliberals, nevertheless intensified neoliberals' commitment to futurity—either as growth or social progress—through extraction. Leftists' rise to state power across the region—the "pink tide"—revealed a rift between progressive resource nationalists and a broad coalition of anti-extractivists, including indigenous movements, feminists, and environmentalists, who had until then largely allied themselves with socialist and progressive parties. It was the coming to power of leftist resource nationalists that revealed this rift and catalyzed a new wave of *extractivismo* theory.[42] Whereas the critique of extractivism tends to fall along a right-left political binary in the U.S., the Latin American experience reveals that the problem goes much deeper than a preference for the primary role of the state or the market in a political economy.[43]

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[41] See, for example, Eduardo Gudynas, "The New Extractivism of the 21st Century: Ten Urgent Theses about Extractivism in Relation to Current South American Progressivism," *Americas Program Report* (Washington, DC: Center for International Policy, Jan 21, 2020): 1-14. Gudynas's analysis of extractivism echoes that by a host of Latin American scholars, including Alberto Acosta and Maristella Svampa.

[42] Thea Riofrancos, "Extractivismo Unearthed: A Genealogy of a Radical Discourse," *Cultural Studies* 31, no. 2-3 (2017): 277-306, DOI: 10.1080/09502386.2017.1303429.

[43] It is important to state that my reasons for engaging *extractivismo* theorists in Latin America have to do, first, with their unique theological analysis of extractivism; second, with the temporal breadth and determinative role of extractive industry in the region's history; and third, with the clarity stemming from leftists' rise to power across the region. One crucial difference between Latin American and North

The Uruguayan political ecologist Eduardo Gudynas is a leading theorist of *extractivismo*. In a 2016 article entitled "A Theology of Extractivisms," Gudynas proposed the concept of "ecopolitical theology" to help theorize the irrational nature of both conservative and progressive commitments to extractivism.[44] Gudynas argues that, in spite of overwhelming empirical evidence of extractivism's negative social and ecological effects, "the promoters of extractivism ignore, belittle, or actively reject all these arguments and data in order to keep defending [extractivist] enterprises. Debates in many places have already ceased to be based on arguments, and defenses are made instead based on faith" (13). Commitment to extractivism thus has "a religious dimension," by which he means a blind and irrational faith commitment walled off from rational challenge and debate (14). In other words, Gudynas paints extractivists as fundamentalists. That is why, for him, any analysis of extractivism that fails to treat and contest it as an "ecopolitical theology" associated with a network of religious institutions is destined to fall short. If extractivism's protagonists are so impervious to the abundant scientific data about its

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American extractivism theory is that the former attends primarily to the extractive economies and resource curses affecting entire states vis-a-vis international political economy, while the latter tends to address instead the role of particular sub-regions or resource colonies, such as Appalachia or Native American lands, within the matrix of national and international political economies. Furthermore, political ecologists with a global focus have also drawn from thinkers across the Americas to develop a more planetary critique of extractivism as a pattern of phenomena that, while occurring in particular places, manifests enough of a pattern to be analyzed as a more general phenomenon that defines our global moment. In short, Latin American *extractivismo* theory over the past two decades, though primarily focused on particular changes in that region, has shed light on and put in question much larger forces and patterns of thought and practice across the planet. I engage it in a similar way here. See, for example, Naomi Klein, *This Changes Everything: Capitalism vs. the Climate* (New York: Simon & Schuster, 2014); Henry Veltmeyer and James Petras, eds., *The New Extractivism: A Post-Neoliberal Development Model or Imperialism of the Twenty-First Century?* (New York: Zed Books, 2014); and Kirk Jalbert, Anna Willow, David Casagrande, and Stephanie Paladino, eds., *ExtrACTION: Impacts, Engagements, and Alternative Futures* (New York: Routledge, 2017).

[44] Eduardo Gudynas, "Teología de los Extractivismos: Introducción a Tabula Rasa No. 24," *Tabula Rasa* 24

(Jan-Jun 2016): 11-23 (English translations of this text are mine). References to this text are in line.

negative effects on lives and lands, then it must be that their commitments to extractivism operate at a deeper level than empirical evidence can penetrate.

More than simply a political theology, which brings together political and theological concepts, Gudynas argues that extractivism is an ecopolitical theology because, in addition to joining together political and theological concepts, it "implies very particular ideas about Nature and how to appropriate its resources" (16). The way that nature is conceived cannot be left outside the frame, because it bears on how notions of sovereignty, freedom, time, and determinacy shape collective life. Not only are political, theological, and ecological concepts closely interrelated; Gudynas shows they are also related at the level of social practices and institutions. He points, for instance, to the way extractivism's protagonists treat their critics as heretics: "those who question this faith in extractivism are quickly negated, discredited, and even persecuted" (20). They also have sanctioned teaching institutions and rituals. By theorizing extractivism as an ecopolitical theology, Gudynas hopes to "unravel" the metaphors and myths that bind and sustain collectivities around extractive industry, especially as "expressed in the idea that a country *is* a mining country (as if in the essence of the nation mining was written into its destiny)" (16, emphasis original). Ecopolitical theologies serve to naturalize particular political ecologies of extraction, consumption, and waste within the global economy. Through an integrated political, theological, and ecological analysis, Gudynas seeks to understand the complex ways in which extractivism binds peoples and lands together, and justifies itself, through *mythos*.

Gudynas further claims that his ecopolitical-theological analysis is also generalizable beyond Latin America. He adapts Michael Gillespie's work on the theological origins of modernity in order to understand extractivism as a central pillar and theological doctrine of modernity itself. Gillespie allows Gudynas to read extractivism as a theological project even

though its protagonists deny extractivism's religiosity and normally represent themselves instead in terms of neutral reason, science, and technology. In their self-understanding, they are merely "mediators who provide indispensable materials to ensure human wellbeing" (20). But, according to Gillespie, modernist appeals to science and reason, as against religion, ring hollow because they fail to acknowledge the debates in theology and metaphysics that constitute modernity. Though modernity is often equated with secularization, Gillespie argues that it is more accurately described as a "gradual transference of divine attributes" to human beings, the natural world, social forces, and history. In this way, "The so-called process of disenchantment is thus also a process of reenchantment in and through which both man and nature are infused with a number of attributes or powers previously ascribed to God."[45] As God is rendered either dead or publicly irrelevant, the only way science can provide a coherent account of the world is by divinizing nature and/or the human, "discovering" in them powers and capacities that were previously ascribed to God. For Gudynas, Gillespie's account of transference is the key to understanding extractivism. Gudynas argues that extractivism's sustaining doctrines "go from granting to the human all the powers and capacities over Nature to converting Nature into an aggregate of resources that extractivisms must take advantage of with total speed and efficiency, since this is how progress is fed" (20). In this way, according to Gudynas, "extractivism has become one of the central pillars of Modernity's contemporary expression." This is why "criticism of extractivism always involves questioning the beliefs that sustain it, that reach to the very heart of Modernity; critiques must therefore enter into a theological dispute" (21). In short, at the heart of modernity is extractivism, and at the heart of extractivism is an ecopolitical theology. Imagining an alternative to one of these must involve an understanding and critique of the others.

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[45] Michael Allen Gillespie, *The Theological Origins of Modernity* (Chicago: University of Chicago Press, 2008), 273-74.

Though Gudynas originates the analytic concept of ecopolitical theology, he is far from unique in his theological analysis of extractivism. Many have explored these connections through the concept of sacrifice.

The theme of sacrifice runs deep in Latin American scholarship. Cultural anthropologists in the 1970s and '80s, for instance, wrote extensively about the role of devils, mountain spirits, and indigenous miners' practices of making offerings to appease sacred figures or mountain spirits angered by mining in the Andes.[46] Eduardo Galeano's influential history of Latin American political economy, *The Open Veins of Latin America*, written in 1971, colorfully portrays the region as European and North American extractivists' bloody sacrifice ever since the *conquista*. He draws an analogy between the entire continent and what the indigenous inhabitants of the Bogotá plateau called a *quihica*, a "door." They saw human sacrificial offerings as a "door" because "the death of each victim opened the door to a new cycle of 185 moons."[47] This was an image of future prosperity *via* present blood sacrifice. Gabriela Valdivia echoes the concept when she concludes that "extraction-based development sacrific[es] the lives and environments of some in the name of a better future for others."[48] Even as early as the *conquista*'s dawning moment, Bartolomé de las Casas portrayed the extractive Spanish colonial project in the New World as demonic based on his observations of how it malformed previously virtuous Spanish citizens and made them vicious. Echoing one chief's interpretation that gold was the Spaniards' god, one of las Casas's recurrent metaphors for the colonial endeavor as a whole is the image of a mine into

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[46] See June Nash, *We Eat the Mines and the Mines Eat Us: Dependency and Exploitation in Bolivian Tin Mines* (New York: Columbia University Press, 1979); Michael T. Taussig, *The Devil and Commodity Fetishism in South America* (Chapel Hill, NC: University of North Carolina Press, 1980).

[47] Eduardo Galeano, *The Open Veins of Latin America: Five Centuries of the Pillage of a Continent, 25th Anniversary Edition*, trans. Cedric Belfrage (London: Monthly Review Press, [1971] 1997), 8.

[48] Gabriela Valdivia, "The Sacrificial Zones of 'Progressive' Extraction in Andean Latin America," *Latin American Research Review* 50, no. 3 (2015): 253.

which the Spanish send indigenous slaves to be eaten by the earth in order to provision Europeans with precious metals.[49] As I explore in the next chapter, the rupture that catalyzed his calling to defend the Amerindians occurred when he realized that no true sacrifice could be made in the Americas under the existing structure of Spanish colonization.

In a remarkable 2016 special journal dedicated to analyzing the theological dimensions of extractivism, leading Latin American social scientists examined its sacred texts, liturgies, doctrines, curses, seminaries, churches, priests, missionaries, heresiologies, and church-state relations.[50] They examined these religious dimensions through paying close attention to particular cases, discourses, and extractivist leaders across Latin America. Though I cannot summarize these rich analyses here, it is sufficient to note that what holds this diverse group of theorists together is their shared analysis of extractivism as a religious myth about time, sacrifice, and the conditions for human wellbeing that travels under the label "developmentalism."[51]

What sets this more recent critique of extractivism as a theological project apart from some earlier versions, such as Galeano's, is that some of its leading thinkers, such as Gudynas, Alberto Acosta, Thea Riofrancos, and Marisol de la Cadena, point toward the constructive alternatives to extractivist ontologies and political ecologies being developed by indigenous, feminist, and environmental movements. For instance, Riofrancos theorizes anti-extractivists' alternative ecopolitics as an "aquatic Leviathan" that ties together the human and otherkind species that rise up against the commodities consensus all along the pipelines and roadways through which extracted resources flow.[52] Acosta calls for a double movement to "dethrone fetishes" and inaugurate "a great cultural transformation" in accordance with the emerging

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[49] Bartolomé de las Casas, *A Short Account of the Destruction of the Indies*, ed. and trans. Nigel Griffin (New York: Penguin Books, 1992).

[50] *Tabula Rasa* 24 (Jan-Jun 2016), [h…]://dev.revistatabularasa.org/numero-24.php.

[51] Acosta, "Maldiciones, Herejías," 49.

[52] Riofrancos, "Extractivismo Unearthed," 296.

concepts of *buen vivir* and *sumak kawsay*, which are often portrayed as alternatives to, not alternative modes of, development.[53] And de la Cadena adapts the Francophone concept of "cosmopolitics" to name the irreducibly pluralistic and inter-ontological alliances that form in opposition to extractivism; for her, the politically significant relationships some anti-extractivist groups have with mountain spirits and other sacred extrahuman figures must not be overlooked but should actually be incorporated into ecopolitical theory.[54]

From this tradition of examining extractivism as a diabolical ecopolitical theology with a global reach, there are a number of key conceptual and hermeneutical insights that bear on the subject of this chapter.

First, extractivist models of development are founded on violent sacrifices. This is seen in Galeano's analogy with *quihica* or Acosta's notion that the violent commodification of human beings and "nature" is constitutive of extractivism's appropriation of resources.[55] There are many related images that all point toward the fact that violence and sacrifice are not extraneous to extractivism, as if the latter could persist without them, but are rather constitutive conditions of it. This point resonates with the concept of a sacrifice zone examined in the previous chapter. The connotation is always that of a false sacrifice that ought to be resisted. I know of no *extractivismo* theorist who explicitly makes a hermeneutical distinction between true and false sacrifices as I do here, though one could argue that such a distinction is operative in their thought, especially as some turn to indigenous notions of *buen vivir* and *sumak kawsay* as alternative ontologies to an extractivist ontology.

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[53] Alberto Acosta, "Post-extractivismo: Entre el Discurso y la Praxis. Algunas reflexiones gruesas para la acción," *Ciencia Política* 11, no. 21 (2016): 326.

[54] Marisol de la Cadena, "Indigenous Cosmopolitics in the Andes: Conceptual Reflections Beyond 'Politics'," *Cultural Anthropology* 25, no. 2 (2010): 334-370.

[55] Acosta, "Maldiciones, Herejías," 38 (all translations of this text into English are mine).

Second, extractivism has cast a shadow over entire histories, populations, and geographies in the form of a curse. Though often addressed by scholars of international relations as a mere matter of governance and management, the concept of a "resource curse" is taken with utmost seriousness in *extractivismo* theory as a demonic possession and a form of bondage that convinces so many Latin Americans to keep sacrificing lives and lands for a promised future that never arrives. Acosta argues that this curse was built into the very fabric of classical political-economic theory: David Ricardo naturalized Alexander von Humboldt's interpretation of Latin Americans as beggars sitting on a pot of gold when he developed the doctrine of comparative advantage. This doctrine wrote a necessary distinction between "blessed" and "cursed" economies into the very fabric of the concept of an international free market.[56] In other words, Ricardo transformed a historical fact (colonial extractivist enterprise in Latin America) into a law-like natural process (a country's abundance or lack of natural resources determines its role in the international division of labor). This naturalizing of a colonial relationship persists as a core doctrine of economic theory. Free market principles, such as comparative advantage, have served to keep "cursed" economies, which are ironically abundant in natural resources, focused on the export of primary commodities. A historical relationship is transformed into a natural fact about political economy, which then functions as an imperative or guiding principle for economic policy. Though economists tend to portray their science as an exercise in description, Acosta demonstrates that the historical, factual, and normative dimensions are woven together through extractivism and its organized distribution of blessings and curses.

Third, extractivists confuse means and ends, thus employing a teleological suspension of the ethical: they rationalize evil means (sacrificing lives and lands) to try to achieve an ethical, futuristic end (development). Thus forms the idea that the only way beyond extractivism is

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[56] Ibid., 28.

through more extractivism. Acosta calls this a "diabolical circle," and he points to the progressive Ecuadorian government's policy of "leaving extractivism through extractivism."[57] Once an ethical evaluation of means has been suspended in pursuit of a future prosperity or social welfare, then extractivism's protagonists can render almost any present cost acceptable.

Fourth, extractivism generates demonologies and angelologies that help people deal with the apparent contradictions between extractivism as a pathway to development and extractivism as a source of injustice and suffering. Anthony Bebbington is a materialist political ecologist who nevertheless grants that there is something real about the spiritual force that extractivism wields over people's minds. Though almost everyone recognizes that extractivism is a "bargain with the devil," meaning that it is a bargain against Latin America's history, he sees religious elements manifested by the three types of response to that history: (1) the optimists who think that, in spite of the evidence of the past, this time the the devil should be trusted to uphold his side of the deal, (2) the pessimists who think the devil will simply coax people into using ever-newer and more destructive forms of extractive technologies to intensify sacrifices of the region's life and land, and (3) the institutionalists who invest institutions, like transparency initiatives or responsible mining agreements, with an angelic power to miraculously rescue land and people from the curse.[58] Demonologies and angelologies like these soothe the consciences of people who might otherwise resist extractivism on the grounds that it has been bad news for centuries.

Fifth, extractivism's detractors are demonized as heretics who must be rejected, silenced, or eliminated. Many *extractivismo* theorists emphasize this particular point that in the absence of critics' ability to discuss empirical and historical data with extractivists, the only category of

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[57] Ibid., 31, 50.

[58] Anthony Bebbington, "Extractive Industries, Socio-environmental Conflicts and Political Economic Transformations in Andean America," in *Social Conflict, Economic Development and Extractive Industry: Evidence from South America*, ed. Anthony Bebbington (New York: Routledge, 2012), 5-8.

existence open to these critics is that of being a heretic. Whereas, in the past, indigenous groups were often excluded from public matters for having "primitive" ideas and practices that did not cohere with modern, scientific rationality, now extractivists routinely dismiss indigenous groups, feminists, and environmentalists who build their arguments based on historical realities and empirical data. In other words, when indigenous groups use modern science to contest extractivism, they are the ones labeled heretics.[59] This is the background to Gudynas's conclusion, in his article "Petroleum is the Devil's Excrement," that we should all become heretics.[60] *Extractivismo* theory suggests that modern rationalism has become its opposite, and the quintessential representatives of the non-modern—indigenous peoples—have become the bearers of the rational.

Sixth, in an extractivist version of the sacrifice zone concept, the world is divided into "cursed" and "blessed" countries—those that import nature and those that export it. In reverse order, these are also the places that import costs and those that externalize them. Acosta argues that extractivism depends entirely on this mechanism along with processes of privatizing profits while externalizing costs by ecologizing, socializing, and/or invisibilizing them. Valdivia echoes many *extractivismo* theorists when she concludes that any effective response to extractivism must include a program of making these processes and struggles visible.[61] The global unequal distribution of curses and blessings is augmented by externalizing and invisibilizing costs.

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[59] In chapter five, I flesh out why the empirical sense of witness is crucial to an account of witness as a way to enact change.

[60] Eduardo Gudynas, "El Petróleo Es el Excremento del Diablo: Demonios, Satanes y Herejes en los Extractivismos" *Tabula Rasa* 24 (Jan-Jun 2016): 145-167.

[61] Valdivia, "Sacrificial Zones," 253: "The struggles over progressive extractivism, whether overtly violent like Tendetza's death or collectively inspiring like the Peoples' Summit, are reminders of the continuing sacrifices of those who live in zones of extraction and of the need to continue making such struggles visible."

Seventh, new and progressive forms of extractivism are testimony to a "commodities consensus" that turns both human persons and nature into resources to be extracted, used, and wasted.[62] Gudynas calls this a "double commodification" at the heart of which is a paradox: One damages nature and society to produce wealth that can be used to try to fix the damage. This "commodities consensus" is the name Maristella Svampa gives to the continuity between neoliberalism's "Washington Consensus" and the state-socialist versions of extractivism that succeeded it.[63] Human resources, in the form of labor, and natural resources are extracted from their relational and material contexts and reduced by market mechanisms to commodities whose value derives from demand. This analysis lies behind Acosta's call to "dethrone fetishes."[64] More important than the divide between capitalism and socialism is that between extractivism (in either capitalist or socialist form) and the united front that is emerging to contest its commodities consensus.

Eighth, and finally, contemporary extractivisms stand in continuity with colonial history in that they are driven by a missional imperative. The historian Kendall Brown affirms the historical claims many *extractivismo* theorists make regarding an extractivist continuity from the colonial encounter to today. Brown contends that Christopher Columbus arrived in the "New World" in search of Ophir, the biblical city where Solomon acquired the gold to build the temple and which was linked by medievals to tales of eastern gold, to finance the Last Crusade.[65] Though

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[62] Maristella Svampa, "Commodities Consensus: Neoextractivism and Enclosure of the Commons in Latin America," *South Atlantic Quarterly* 114, no. 1 (2015): 65-82.

[63] Ibid.

[64] Acosta, "Post-extractivismo," 326.

[65] For example, in 1547, one Spanish writer echoed Columbus when he wrote, "Just as God provided Solomon with that gold and silver brought to build the material temple, so that it was the richest and most solemn in the world, he likewise wanted the Spaniards to bring from remote and distant places so much gold and silver and other riches to edify the spiritual temple, which is to bring the infidels to the society and council of the holy mother Church." Kendall Brown, *A History of Mining in Latin America: From the Colonial Era to the Present* (Albuquerque: University of New Mexico Press, 2012), 2-3, 12.

no longer considering it part of an explicitly theological-missiological project, *extractivismo* theorists see the contemporary guiding notion of development as the latest iteration of a similar project. Developmentalism carries a missional imperative that guides state and market institutions and thus becomes what some scholars have called an "extractive imperative."[66] Gudynas thus interprets an extraction-based doctrine of development in either free market-oriented or state-socialist forms as a missiology and eschatology, for it invests resource extraction with salvific fervor. Extractivism's present sacrifices of life and land become necessary to secure and control a future life of abundance and development.

I can summarize this ecopolitical-theological analysis of *extractivismo* in the following way: extractivism functions as a story of salvation. Developmentalism funded by extractivism functions as a good news story. And, as I will argue in the next section, it is thus best understood as a rival salvation story to that which is revealed by God's economy of salvation in Christ and the political ecology of God to which Christ re-members creatures. Extractivism is, in short, an instance of sin and idolatry.

IV. A Theology of Extractivism as False Sacrifice

The line of thought I analyzed in the previous section was largely developed in Latin America by social theorists, not theologians, but it applies much more widely, and I think it has a more realistic basis than *extractivismo* theorists recognize. Whereas their theological examinations of extractivism almost universally deploy the concepts of theology and religion to shock reasonable people into rejecting it, I seek to show that their insights are both deepened and enriched by engagement with Scripture and diverse Christian theological traditions. Extractivism does, in fact,

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[66] Murat Arsel, Barbara Hogenboom, and Lorenzo Pellegrini, "The Extractive Imperative in Latin America," *The Extractive Industries and Society* 3 (2016): 880.

have a religious power to bind peoples and lands together in characteristic patterns of relation. That is the power of false sacrifice.

What *extractivismo* theorists analyze as a diabolical ecopolitical theology that forms the mythological basis of extractive capitalism is better described as a particular family of sins and idolatries that has tempted and menaced peoples and places to varying degrees since at least the era of European colonial expansion.[67] Since the sixteenth century, this historical sin of extractivism has been adopted, adapted, resisted, subverted, syncretized, and secularized in countless ways across the globe. I have no stake in divorcing it from theories of capitalism. However, in light of its persistence across diverse ideological commitments and economic models, it merits a treatment of its own. Building on a tradition of reflection on sacrifice and politics in the Bible and theology, I examine this sin of extractivism as a false sacrifice that founded and continually reconstitutes an extractivist political ecology. To state it in abstract terms, this false sacrifice entails dis-membering creatures from the community of creation by cutting them off from their communicative relations and cutting them down to their utility value in restricted human economies in order to secure future blessings—that is, to control the future. To represent the effects of this dis-memberment on wider political ecologies I use the atmospheric and aquatic metaphors of pollution and blockage, respectively. My purpose for characterizing the sin and effects of extractivism in these terms, which are associated in the Bible

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[67] Many scholars have examined modernity's problems as theological problems, including Orlando Bentancor, *The Matter of Empire: Metaphysics and Mining in Colonial Peru* (Pittsburgh: University of Pittsburgh Press, 2017), which traces extractivism to a late medieval form of metaphysical instrumentalism; Willie James Jennings, *The Christian Imagination: Theology and the Origins of Race* (New Haven, CT: Yale University Press, 2010), which traces it to a late medieval diseased theological imagination that accompanied the extraction of bodies from places; Michael S. Northcott, *A Political Theology of Climate Change* (Grand Rapid, MI: W.B. Eerdmans Press, 2013), which traces the problem to voluntarism and early modern thinkers; and Carolyn Merchant, *The Death of Nature: Women, Ecology and the Scientific Revolution* (New York: HarperCollins, 1980), which traces an extractive mentality to a gradual shift from viewing the world in organic terms to mechanical terms.

with Israel's sacrificial cult, will become apparent: It accords with both theological critiques of false sacrifice and the relational and atmospheric concepts of ecology.

Augustine's *City of God* provides me with the basic contours of analysis because his context of crisis and purpose for writing that book share affinities with my own. Alaric invaded Rome in 410; it was the first time in centuries the "eternal city" had been invaded, and it signified an epochal shift, the beginning of the end of the empire's western branch. Leaders of the pagan renaissance, who sympathized with Julian's earlier attempt to reverse the empire's Christianization and make Rome great again, blamed the invasion on Christians and their imperial ban on pagan sacrifices. They interpreted Alaric's invasion as the gods' judgment on Rome for banning pagan religious ceremonies and sacrifices. At the same time, many Christians came to hold something akin to Eusebius's view that the fusion of Christianity and the Roman Empire—a fusion that brought an end to persecution—was written by God into the divine economy of salvation. Augustine, therefore, set out to argue, first, that pagan sacrifices were powerless to make the Roman Empire a just or true republic and, even worse, they actually bound people in webs of viciousness, injustice, self-love, and domination. In other words, paganism did not make Rome great; if Rome produced anything good, it was due to God's providence. Second, he sought to de-link Christian hope and social thought from any particular form of political community on earth and instead characterize the Christian's earthly existence as a pilgrim's journey of being both in exile and, in a temporal sense, at home in Babylon. Joined as members of the city of God by the one true sacrifice of Christ, while on their earthly sojourn Christians are to seek the good of the earthly cities in which they find themselves members. The goods that constitute earthly cities are real goods, created goods, and are therefore good for Christians and unbelievers alike. The genuine goods of Christian existence are therefore bound up with the good of Christians' neighbors and the city as a whole. In his book, Augustine thus provided a social hermeneutic to

help Christians navigate their dual membership in heavenly and earthly cities during a time of crisis by distinguishing between two fundamentally opposed sacrifices that grounded two cities that, while intermingled in time, will nevertheless be separated out at the final judgment, when the new creation will become fully visible on earth.

I find in this basic framework a theologically and theoretically rich way to examine the false sacrifices to which Restoring Eden responded with a re-membering practice of truth-telling. The extracted landscapes of Big Crow Basin and Appalachia, and the polluted atmospheres of Chicago's Southside and North Birmingham, are concentrated sites of dis-memberment and false sacrifice cut off from the goods of life in the earthly city. They also signify a much larger, looming planetary crisis. As Alaric's brief invasion of Rome signalled something much larger than one single event, so it is with these sacrifice zones that signal a greater dis-memberment and alienation between human beings and society, the earth, and the source of life. With some analogy to Augustine's day, there is also considerable confusion today over the role of sacrifices in society, whether they are salutary or harmful, how to distinguish between salutary and harmful sacrifices, and how sacrifices relate to time, moral agency, and history. Furthermore, many lay blame for our social and ecological ills at the feet of Christianity, singling out particular doctrines or traditions that promote anthropocentrism, hierarchies of being, and the denigration of matter.[68] Others have so entirely fused Christian faith with natural resource economies, economic developmentalism, and consumerist ways of life that they cannot envision Christian existence apart from extractivism.

The *City of God* presents an analysis as fresh today as it ever was. In it, Augustine closely attends to the historical events, intellectual traditions, major texts, and empirical data available to

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[68] Many of these critiques have their source in Lynn White, Jr., "The Historical Roots of Our Ecologic Crisis," *Science* 155 (1967): 1203-7.

him as he develops a hermeneutic built on a theological distinction between two cities. Yet, these cities are not set against one another in a Manichean scheme, and neither is some model city offered as a utopian blueprint for Christian life and politics. Rather, the distinction between two cities is offered as an interpretive aid to Christian witness and political judgment in time, particularly in this "secular" or complex time between the epochal event of Christ and his *parousia*, when two times and two societies overlap. During this time, the kingdom of God is already inaugurated in Christ but is not yet brought to its completion. Though this temporal complexity would later be smoothed out to a considerable degree in the medieval configuration between two rulers (Pope and King), two swords, and two governments (Church and Kingdom) within one society, Augustine never identified the heavenly city with the institutions and offices of the Roman Church. In his view, they remained part of the earthly city. During this complex, secular time, both Christian and civil communities bear witness to God's action for us in Christ and the Spirit. And though we must interpret the world and history if we are to act, no mortal can develop a theory capable of reading the inscrutable hand of God in history so as to know beyond doubt who (or what) belongs to which city. As Augustine provided an interpretive aid for Christians navigating a time of change and crisis, so might we develop an interpretive aid to environmental practical reasoning.

While I treat Christians' citizenship in the city of God procured by the sacrifice of Christ in the next chapter, the focus here is Cain as the archetype of false sacrifice, who in Augustine's account seeks to instrumentalize God to satisfy his own disordered desires. Cain attempts to control the sacrifice—more accurately, to control its future outcome—by directing the blessing back toward himself. In Cain Augustine invites readers to see the likes of Romulus, the founder of Rome who killed his brother Remus, and any other false sacrificer and founding father who instrumentalizes God and others to build and maintain unjust societies. These are societies that

seek to control the future because they are ordered toward satisfying their own desires. How could a disordered heart, nay an assembly of disordered hearts, produce a just order? According to Augustine, Cain is the founder of the earthly city. I would merely add that he is also the founder of an ecology, for every city is configured within and reconfigures the soil, by which I mean the non-human otherkind creatures. In Gudynas's terms, every city is configured around particular conceptions of nature. Cain is the founding father of a political ecology, a soily and soiled city.

Who is this Cain? According to the Genesis account, he is the firstborn of Adam and Eve, and, like his father, who was sent out from "the garden" to "work the [cursed] ground," he is also a "worker of the ground."[69] His offering from the ground is rejected by God, while his pastoralist brother Abel's is accepted. Cain grows angry at and jealous of Abel and kills him. The ground "opens its mouth" to receive Abel's blood, and from it resounds Abel's righteous cry for vengeance and just punishment. Cain is "cursed from the ground" and sentenced to a lifetime of wandering upon and struggling with the earth for his survival.[70] But God ultimately places a limit on this demand for justice by preserving Cain from his just desert, at least as justice is conceived in earthly terms. Significant for Augustine is that Cain is then identified as the first settler and builder of a city. And in that role he is also named as the father of culture and industry, for from his line come musical, livestock, and—most noteworthy given my focus—industrial arts. In this sense, Cain is depicted, alongside Abel and Noah, as one of the "fathers of humanity."[71] His story is portrayed as having a general applicability. It applies to all people. And the claims made by it

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[69] Genesis 3:23; 4:2. This reading of the story of Cain, Abel, and the ground is informed by Mari Jørstad, "The Ground That Opened Its Mouth: The Ground's Response to Human Violence in Genesis 4," *Journal of Biblical Literature* 135, no. 4 (2016): 705-715; and *The Hebrew Bible and Environmental Ethics: Humans, NonHumans, and the Living Landscape* (New York: Cambridge University Press, 2019), 58-65.

[70] Genesis 4:10-11.

[71] Jørstad, "The Ground That Opened Its Mouth," 707.

hold for all. Civilization, culture, and industry are thus marked in the first pages of Genesis by an ambivalent inheritance that stems from both the prelapsarian "cultural mandate" of Genesis 1:28 (to be fruitful and exercise dominion) and 2:15 (to tend and keep) as well as the inheritance of Cain's false sacrifice, sinful desire, and fratricide.

A number of New Testament authors further interpret Cain and his significance in the light of Christ.[72] The author of Hebrews distinguishes the two sacrifices offered by Cain and Abel by the criterion of faith: What made Abel's sacrifice acceptable was that it was offered "by faith."[73] (We are left to conclude that Cain's offering lacked faith.) And this faithful giver Abel, who through faith "still speaks," is the first named among a cloud of witnesses to the faith whose founder and perfecter is Jesus, "the mediator" whose "sprinkled blood speaks a better word than the blood of Abel."[74] Jesus' word of mercy is better judgment than the bloody soil's righteous demand for vengeance and retribution.

The first Johannine epistle more directly relates these two sacrifices to two different forms of belonging: those "born of God," who are "the children of God," love their fellows and act righteously, for they have "passed out of death into life," while those who are "the children of the devil," like Cain, "who was of the evil one and murdered his brother," are said to "abide in death."[75] That Cain's offering was evil is said to mirror his membership in death and sin. The character of his sacrifice and the status of his membership in an economy of death reflect one another and are mutually revealing.

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[72] While I adopt a canonical reading of Cain here, I recognize that there are significant differences between the Cain of Genesis and the figure who is represented by New Testament authors. I think constructively with these differences and canonical developments, rather than limit my examination of the figure of Cain to an Old Testament reading.

[73] Hebrews 11:4.

[74] Hebrews 11:4; 12:24.

[75] 1 John 3:4-18.

The author of Jude's brief epistle organizes the entire letter around a description of what it means to walk "in the way of Cain." This is the way of the ungodly, who pollute the atmosphere with sin, refuse to know anything beyond their barest instincts and passions, and seek to satisfy their greedy and selfish desires. They "defile the flesh" and are "devoid of the Spirit." The picture painted of these defilers—really, all of us—is a landscape: We are like "waterless clouds, swept along by winds; fruitless trees in late autumn, twice dead, uprooted; wild waves of the sea, casting up the foam of their own shame; wandering stars, for whom the gloom of utter darkness has been reserved forever."[76] The way of Cain is portrayed as nature out of sync, as flesh cut off from Spirit (life). We are defilers who pollute the earth, sky, and water with a spreading stain that affects everything it touches and cuts it off from life-giving Spirit. While Augustine rightly named Cain the founding father of the earthly city, he never fully integrated the earth and industrial arts into his hermeneutical distinction between the two cities. Yet, the biblical authors themselves testify to a wider, more ecological way of framing Cain's sacrifice, its consequences, and the patterns of social and ecological relations it bequeathed.[77]

Cain, too, is our forefather.[78] But he is not our forefather by his own blood; rather, he is our forefather by the blood he shed—Abel's life—and the afterlife that this primordial fratricide has had in the earth and human culture.[79] The ground that actively opened its mouth to receive

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[76] Jude 8-13. When I say that all humanity are the children of Cain I do not dispute the traditional interpretation of Genesis that Cain's bloodline was ended at the flood. However, the author of Genesis notes that even though we may not be Cain's descendents by blood, all those who live in civilization and participate in culture and industry are the cultural heirs of Cain and are, therefore, Cain's children.

[77] Like so many in the tradition, Augustine looked to Adam and Eve when developing his primary and universal account of sin as solipsistic pride, along with its regeneration and universality through sex and birth. Without denying the theological importance of Adam's sin or engaging debates about sex and original sin here, there is nevertheless a complementary need to develop a generic account of sin and its wide diffusion through the figure of Cain and his offspring.

[78] I need to make explicit again that I read the Genesis account to teach that Cain is one of our forefathers. I reject any sense that he is our only or even our most important one.

[79] Genesis 9:4-6 points out that the blood of a creature is its life.

Abel's blood became one with Abel, lent him voice, and still amplifies Abel's cry today.[80] By the end of the whole episode, Cain, who was previously associated with the ground he worked, is separated from it, at odds with it; said differently, the ground actively resists Cain. And it is his direct bloodline that is said to bequeath to universal humanity the arts of mining, culture, livestock management, and industry. The ground that was once God's partner in creation has become witness to a bloody act of un-creation, for which Cain is dis-membered from it. As Mari Jørstad in her study of the ground's role in Genesis 4 puts it, "the ground actively chooses whether or not to respond to Cain's efforts and, as a result, has the power to determine the form of Cain's life."[81] The ground is an active character both in the story of Cain and Abel and in the history that unfolds from it. Though Jørstad recovers the ground as a primarily beneficent moral agent in the story—an agent in sync with God's will—against those who treat it as Cain's accomplice in murder, I see no need to choose between the ground's moral purity and its role as accomplice. The Apostle Paul, for instance, paints a more complex picture when naming a solidarity between humanity and all of creation in both bondage and liberation.[82] I have pointed out that the author of Hebrews also paints a complex picture. Without denying the righteousness of the cry for justice from Abel's blood amplified by the ground through the ages, the author nevertheless affirms that the blood of Jesus speaks a better word. The injustice against Abel being infinite, no amount of finite justice could possibly restore his life; righting such an infinite wrong required nothing short of the infinite judgment of God in Christ.[83] In this vein, it is important to note that God does not satisfy the blood's cry for justice from the ground, but instead places a merciful limit on it by protecting Cain from revenge in his new state of dis-memberment and

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[80] Again, I am indebted in this reading to Jørstad, "The Ground That Opened Its Mouth."
[81] Ibid., 711.
[82] Romans 8:19f.
[83] For this argument, see Oliver O'Donovan, *The Ways of Judgment* (Grand Rapids, MI: W.B. Eerdmans, 2005), 26-27.

separation from the earth. Even the false sacrificer, the one whose offering was rejected by God, is given a place in God's economy.[84] Yet this state of dis-memberment is the state in which Cain develops the arts of city building and his offspring bequeath culture and industry to humanity—cultural artifacts that outlast his physical bloodline. Not being Cain's children by blood, we are nevertheless born into a world with blood-stained ground against which we have learned to struggle with industrial technologies. Again, the prelapsarian cultural mandate together with this inheritance from Cain suggests at the very least that culture making, city building, and tool fashioning are marked by an ambivalence that should cast suspicion on any attempt to resolve the tension by smoothing out the bumps. Optimism in the saving power of technology, for instance, is rendered unwarranted and, while a positive role for technology is not rejected, it is at least circumscribed here.

Exploring sin, its consequences, and its diffusion through the figure of Cain is amenable to thinking ecologically about sin as a defilement, pollution, or blockage. We who walk in the way of Cain and belong to the devil and abide in death are constituted by this pollution and implicated in its diffusion through the soil, air, and water. We are composed of good, created soil and divine breath, yes. And we are also composed of defiled ground and polluted air. The metaphor recurs even in the New Testament. As the Apostle Paul writes to the Ephesians, "you were dead in the trespasses and sins in which you once walked, following the course of this world, following the prince of the power of the air, the spirit that is now at work in the sons of disobedience—among whom we all once lived in the passions of our flesh … and were by nature children of wrath."[85] We have no choice but to indwell a polluted atmosphere. In his study of metaphors of atonement in Scripture and theology, Colin Gunton identified this as a priestly way

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[84] This theme is explored by Barth in his exploration of how God deals with rejected figures in the Old Testament narratives. Barth, *Church Dogmatics* II/2, 340-409.

[85] Ephesians 2:1-3.

of conceptualizing sin as it is revealed by the light of salvation. Whereas the metaphor of the cross as victory figures sin as bondage and the cross as justification figures it as a breach of the law, the other side of the teaching that Christ sacrificed God's own life on the cross for the life of the world is that "sin is construed in terms of uncleanness" and defilement. Sin is construed as a suffocating pollution dispersed throughout creation and binding creatures together into political ecologies of death. "We shall," Gunton continues, "begin to understand the nature of sacrifice when we come to see its function in the removal of the uncleanness which pollutes the good creation."[86] God's Word and work understood in the priestly frame foregrounds matters of life and death within the ambiguity of living in a good but defiled creation and as good but polluted creatures. This is a priestly way of discussing sin, its general diffusion, and the ambivalence of our human relation to the earth, air, water, and other living creatures.[87] Lest this sound Pelagian—or Rousseauian—there is no implication here that individuals are born free of sin only to be polluted by the world or society. It is simply another metaphor—albeit an under-theorized one—drawn from Scripture for thinking about sin's consequences and general diffusion. But though under-theorized, I contend that it is an especially appropriate way to examine extractivism as a sin

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[86] Colin E. Gunton, *The Actuality of Atonement: A Study of Metaphor, Rationality and the Christian Tradition* (Edinburgh: T&T Clark, 1988), 119.

[87] This priestly view of sin as defilement and pollution resonates also with work on the doctrine of original sin by some feminist theologians who build on the metaphor of a blockage. For instance, Kathryn Tanner conceptualizes sin as a blockage that cuts creatures off from God's abundant gift-giving. Sin, in her view, is "the human refusal of God's hopes for the world as a place where God's perfect triune self-communication of goodness might be imitated. Human beings in this way sin, by closing their eyes to and blocking the reception of God's gifts to themselves and others." Kathryn Tanner, *Jesus, Humanity and the Trinity: A Brief Systematic Theology* (Minneapolis: Fortress Press, 2001), 46. Joy Ann McDougall draws on Tanner's work to develop a doctrine of original sin as "a radical and universal distortion that infects the whole human condition." She further argues that this distortion should be understood as a "bondage of the eye/I" that distorts individual and structural vision by casting social and historical forms of domination as natural. Joy Ann McDougall, "Rising with Mary: Re-visioning a Feminist Theology of the Cross and Resurrection," in *The Strength of Her Witness: Jesus Christ in the Global Voices of Women*, ed. Elizabeth A. Johnson (Maryknoll, NY: Orbis, 2016), 34-38.

constituted by false sacrifices that defile matter and dis-member creatures from communion with life.

Having noted a biblical warrant for exploring extractivism as a sin in the tradition of Cain and his false sacrifice, there is still a need to theorize extractivism in its historical particularity. Though Cain's false sacrifice and murder of his brother separated him from the earth and catalyzed the development of technological arts for struggle against the earth, I am not suggesting that the extractivist political ecology I have in view in this chapter began in the primeval history. That would be counterproductive; it could, for instance, excuse contemporary extractivists from taking responsibility for their active (and often knowing) participation in filling the world with sacrifice zones. While extractivism's roots might be found in the primeval history in a generic way, and Cain might rightly be said to be its archetype, its particularity belongs to history. It is a particular sin that took hold and spread since the late medieval period through European expansion, and it still lies before contemporary individuals and societies, even those far beyond Europe and Europeans, as a real temptation. This is akin to how Augustine develops a theological understanding of Cain as the archetypal founder of the earthly city in order to interpret the historical figure of Romulus, the fratricidal founder of Rome. We might similarly interpret a Bacon or a Locke, a Columbus or a Cortez. Thinking theologically about Cain can aid our interpretations of ourselves and the particular temptations we face in history.

Beyond this generic, priestly account of sin and false sacrifice in the way of Cain, what might Christian theologians and thinkers contribute to the particular theory of extractivism as an ecopolitical theology? How should we analyze extractivism theologically? Though not an exhaustive account, in what follows I argue that there are a number of ways in which Christian thought can deepen and sharpen a critique of extractivism as an ecopolitical theology. Theology can help to understand extractivism as (1) an act of converting creatures into resources that

defiles the wider ecology, (2) the material base of modern conceptions of life and freedom, (3) a set of relations organized around satisfying disordered human desires, (4) a false Christocentrism and eschatology, and (5) the underlying *mythos* of the modern, sacrificial nation-state most clearly visible in its resource colonies.

A. Converting Creatures into Resources

Analyzed theologically, extractivism is understood to be constituted by the false sacrifice of converting creatures into resources, which defiles matter and pollutes the ecosystem with sin. The priestly framing I suggested above recalls an insight Delores Williams derives from her reflection on how the earth and Black women's bodies have been defiled by the extractive industries of coal strip-mining and slave breeding.[88] Williams calls this sin defilement, and she emphasizes that the act associated with it is the struggle to violently break spirit from matter, whether one has human or otherkind matter in view. As the author of Jude puts it, defiled flesh is "devoid of the Spirit." Defiled matter is matter rent from its communion with life and the Giver of Life. As the third article of the Creed attests, theological reflection on the Spirit involves reflection on life-giving communion, community, and communication. The Spirit communicates divine grace and gifts to creatures, constitutes the community, and communicates created matter into the Son and therefore into the Trinitarian Life. Attempts to break matter from spirit are attempts to extract matter from its life-giving and life-sustaining communicative relations with other creatures and the Creator. This process of turning creatures into resources—resourcification—falsely redirects them from their primary membership in God's economy to their value and purpose being determined instead by their membership in particular, defiled human economies: They become second-class,

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[88] Delores Williams, "Sin, Nature, and Black Women's Bodies," in *Ecofeminism and the Sacred*, ed. Carol J. Adams (New York: Continuum, 1993), 24-29.

resourcifiable members of human economies. Creatures are dis-membered from the economy of creation and their meaning and value are determined instead by restricted human economies.

Social theorists address this through the concept of commodification. *Extractivismo* theorists adapt this concept to call the breaking between matter and spirit a double commodification of nature (natural resources) and humanity (human resources, i.e. labor). The world-ecologist Jason Moore complements this analysis by historicizing a shift in conceptions of energy and capacity. He points to an epochal metaphysical shift in sixteenth-century Europe in which Nature came to be understood as "work/energy."[89] This category of "work/energy" comprised both extra-human and human productive capacities that could be mobilized and put to work to create profit for free or on the cheap. In other words, the energy contained in horses, trees, and coal was metaphysically continuous with the work that women, slaves, and laborers offered: a source, latent in many particular things, to be mobilized and harnessed for productive activity and ultimately profit. Not incidentally, this same era also saw the first energy transition from wood to its more potent cousin, coal—a transition that was later intensified by the invention of the steam engine. As the category of Nature expanded to include human labor, the category of the Human, with all of the freedoms and duties it entailed, was restricted to a smaller subset. Theology can add that this commodification of resources and reduction of matter to its kinetic properties both entail a process of transforming creatures into resources; in other words, they depend upon defiling creatures. Commodification and the reduction of creatures to energy sources both cut matter out of its communicative relations and cut it down to its utility value in restricted human economies.

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[89] Jason W. Moore, "The Rise of Cheap Nature," in *Anthropocene or Capitalocene?: Nature, History, and the Crisis of Capitalism*, ed. Jason W. Moore (Oakland, CA: PM Press, 2016), 78-115.

B. The Material Basis of a Radically Changed Conception of Life

Extractivism depends on a conception of life that is not defined primarily in theological and metaphysical terms but in humanistic and naturalistic ones. When life is understood in humanistic and naturalistic terms, extractivism becomes the material basis of life and freedom. Though this analytical point does not depend on getting the intellectual history right, I develop this point by thinking with and against scholars who identify the origins of a shift from theological to humanistic and naturalistic reasoning in the medieval nominalist theological revolution and the rubble to which it reduced high medieval realism. In this sense, extractivism emerged from the rubble left by the nominalist revolution and the shifting conceptions of life and (individual and political) freedom it conditioned. This shift, in turn, permitted a particular pattern of material distinctions to be made about (dead, usable, resourcifiable) matter that could be used, sacrificed, or expended in order to preserve or develop other forms of matter deemed more worthy of preservation and development. While environmental ethicists tend to interpret this as an anthropocentric shift, this way of framing it is inadequate because it fails to name the ways that these distinctions between forms of matter also functioned within the realm of the human.[90] My argument is not that nominalist theology caused extractivism, as if political economies were determined by ideas; it is, rather, that nominalism was a major theological development that, among its complex mix of positive and negative aspects, provided the conceptual conditions and possibilities in which extractivism flourished. Nominalism brought to speech a wide gap between God and creation and a related gap between the human mind and created things. This gap was subsequently filled in or bridged in various ways, some of which loosened mining's theological

[90] Ecofeminists and critical race theorists argue that the Humanity-Nature distinction provided an ontological hierarchy of value that functioned to distinguish between higher and lower forms of humanity according to which some were more human or god-like and others more like nature and therefore capable of being treated, like nature, as a storehouse of potential resources awaiting their actualization.

and moral constraints and gave new license to extractive industry as an instrument of human progress.[91] So while nominalist theology did not cause extractivism, the latter emerged and took its recognizable shape and flourished in the ruins of the nominalist theological revolution. Extractivism's historically emergent pattern of false sacrifice developed with and through the cutting off in Western thought of rational, predictable, and patterned relations between heaven and earth. The fruits of this are seen in modern political and economic liberalism. In short, extractivism should be understood as the ecological corollary to liberalism.

Michael Northcott argues that it was the rise of nominalist theology that finally severed an ontological or covenantal relation between God, humanity, and the cosmos (or nature) that had undergirded Greco-Roman and Judeo-Christian thought in various ways for millennia. In view of nominalism's troubling conceptions of God, humanity, and creation, as well as its radical ontological individualism, it is difficult to understand the attraction of nominalism apart from the historical events that lent it credibility. Michael Gillespie shows that a combination of historical events helped make this new theology believable, including the Hundred Years War, the Little Ice Age's changing weather patterns, the invention of new and explosive gunpowder technologies, the Great Schism, the Black Death, and social dislocations stemming from the Crusades. All of these events intensified anxieties and put high medieval realist notions of order, predictability, and rationality in question.[92] How could one possibly see divine rationality reflected in these troubling realities and unpredictable changes? In particular, how could one see God's purposes

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[91] In this position, I differ from Michael Northcott and the radical orthodoxy movement associated with John Milbank that tells a declension narrative from nominalism to the present. In contrast, I find some elements of nominalist theology to be valuable for contemporary thought, including the ways it rendered historical structures contingent by divine revelation, recognized creaturely freedom beyond the human, and provided theological reasons for empirically attending to creatures in their particularity and not only in their derivative status. In other words, I take the nominalist theological revolution to be neither an advancement nor a decline but a mixed bag. As a revolution in thought that upturned high medieval realism, however, it brought to speech a set of anxieties about relations between Creator and creation that were subsequently addressed in various ways, some of which made extractivism not only thinkable but desirable.

[92] Gillespie, *Theological Origins*, 15.

reflected in a papacy and ecclesial hierarchy that seemed to many to give license to corruption? Nominalist theology challenged medieval scholasticism by upending the latter's links between mind and world, mind and God, and world and God, leaving the relations between individual things in various states of incoherence and contingency. The older way of knowing God, oneself, and the world could no longer be trusted. It no longer seemed credible that concepts and categories had real existence in themselves, as instantiations and mediations of God's *logos*; rather, the God who was increasingly understood in voluntaristic terms became distant from the realm of human perception and reason; in short, from the knowable world. This omnipotent God could be known only by revelation and faith, not by reason. Though some nominalists developed theological categories for understanding regularized patterns of God's relating to creation, a wedge was nevertheless driven between God and creation. This wedge eventually resulted in two realms or sources of truth that had heretofore been held together by theology: nature (or reason) and revelation.

Though scholars have examined this history in depth, one relatively under-examined aspect of this nominalist theological revolution in Europe has to do with the fact that it was accompanied by a new regime of extractive industries. Northcott gives evidence that prior to nominalism, extractive industry had been constrained by moral and theological commitments that cast mining in a negative light.[93] Mining existed, but extractive endeavors were nevertheless constrained. The burden of argument, in other words, lay with those who sought to exploit minerals through mining. As ecofeminist Carolyn Merchant argues, an ancient attitude of suspicion toward mining was actually strengthened by high medieval theological associations of the earth as a mother and/or partner with the Creator.[94] Before the rise of nominalist theology,

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[93] Northcott, *Political Theology*, 54-55.
[94] Merchant, *The Death of Nature*, 29-41.

according to Northcott, "mining was immoral, and those who commissioned it sinned not only against Mother Earth but also against divine will." But "if, as Ockham argued, there is only an arbitrary relationship between physical created order and divine moral will, there are no theological grounds for restraining the reordering of the earth by miners and in the forges and metal works that coal fed."[95] While I do not accept Northcott's theory that nominalism caused extractivism, he nevertheless is right to identify extractivism's historical emergence in the wake of the nominalist revolution. Theological and metaphysical restraints that had once placed a check on manipulating the earth through extractive science and technologies began to wither. In this perspective, the metaphysical shift toward understanding nature in kinetic terms as "work/energy" in the sixteenth century can be seen as one element that arose in the wake of nominalism and the forms of political, economic, and ecological relations it conditioned.

A few historical examples from the sixteenth century are evidence of this point. The age of Reformation, for example, is inadequately understood apart from its relation to this loosening of constraints on extractive industry. While the Reformation is often examined in relation to nominalist theology, it is rarely studied in relation to the material conditions brought about by the rapid expansion in extractive industries in the late medieval era, an expansion that accompanied the emergence of naturalism and humanism after the nominalist revolution. For example, Martin Luther was the son of a mine engineer in the Saxony region of Germany that was experiencing a financial and intellectual boom because of new mining industries there. The mining boom in Saxony created new sources of wealth, which is how Luther's father was able to pay for young Luther's university education. During a lightning storm on his way home from university, it was Luther's desperate plea to St. Anne, the patron saint of miners, that immediately preceded his

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[95] Northcott, *Political Theology*, 55.

taking monastic vows.[96] He promised that if St. Anne intervened to save his life, he would enter the monastery. The mining boom was also a determining factor in the Pope's decision to take out a loan not from the older Italian banks but from the newly thriving banks in Saxony so that he could finance the building of St. Peter's in Rome. To pay back those loans the Pope greatly expanded the sale of indulgences. Of course, this was the event that most immediately catalyzed Luther's protest when he posted his *Ninety-Five Theses*. During the early days of Luther's protest, the "Peasants Revolt" inspired by his teaching actually included many miners, which is why some historians have argued that it should be understood as an early industrial struggle over emerging ecopolitical theologies of mining.[97] The new University of Wittenberg, which became a center of humanist and then Protestant teaching, was also founded by Frederick the Wise in 1502 from wealth generated by the mining boom in Saxony. Beyond central Europe, Henry VIII's secularization of church property during the English Reformation finally gave the upper hand to merchants near Newcastle who had struggled for centuries against Catholic ecclesiastics over access to and control over rich coal seams on church property.[98] In England, the site of Europe's richest coal deposits, secularization meant coalification, a shift in sources of heat and energy from recent, surface sunshine stored in trees to potent, fossilized sunshine stored in the earth. These examples from early Reformation history suggest that the rise of extractive industries was not only a consequence of particular intellectual developments—nominalism—but also served to

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[96] St. Anne was considered the patron saint of miners because, according to medievals, from her came Mary (silver) and Jesus (gold).

[97] See Peter Blickle, *The Revolution of 1525: The German Peasants' War from a New Perspective*, trans. Thomas A Brady, Jr. and H.C. Erik Midelfort (Baltimore, MD: Johns Hopkins University Press, 1981).

[98] Barbara Freese, *Coal: A Human History* (New York: Basic Books, 2016), 28-29. The struggle began with a clash between merchants and ecclesiastics in 1268 that, according to Freese, was "the first known act of violence associated with the coal trade" (24). An armed group of merchants entered the property of the prior of Tynemouth, burned down his mills, attacked his monks, and stole a ship loaded with coal in an effort to exert their power over the emergent Newcastle coal trade. The ensuing struggle lasted until Henry VIII secularized church property and therefore gave victory to the merchants.

catalyze new theological developments.[99] In other words, theological and extractive industrial developments mutually shaped one another.

Georgius Agricola is another example of how theological and extractive concepts developed in tandem and shaped one another. Though Bacon is often celebrated as the founder of experimental science, some have reserved that title instead for Agricola, a Catholic humanist who helped to shape the concept of natural resources as buried gifts that are teleologically ordered toward the preservation and advancement of natural human life. During the Reformation, Agricola defended Catholicism in Saxony against Lutheranism. But it was his work on mining that had lasting significance. In Agricola's hands, extractive sciences and technologies acquired positive religious significance. His 1556 book *De Re Metallica* was a textbook on mining that not only mythologized mining as among the highest of human callings—"a calling of peculiar dignity"—but also became the authoritative text on mineralogy for almost two hundred years.[100] Before treating mining methods in detail in the book, his first chapter is a defense of mining against its ancient and contemporary critics.[101] Opposition to large-scale mining had been so formidable for so long that he felt it necessary to provide a compelling account of mining as an honorable endeavor and a contribution to human advancement.

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[99] These new theological developments should not be limited only to Protestant thought. The case of an expanded theology of indulgences is evidence that resource extraction was already shaping Roman Catholic theological development prior to the Reformation.

[100] "Who can fail to realize that mining is a calling of peculiar dignity? Certainly, though it is but one of ten important and excellent methods of acquiring wealth in an honourable way, a careful and diligent man can attain this result in no easier way than by mining." Georgius Agricola, *De Re Metallica, Translated from the First Latin Edition of 1556*, trans. Herbert Clark Hoover and Lou Henry Hoover (London: The Mining Magazine, 1912; Project Gutenberg, 2011), 24, [h…w].gutenberg.org/files/38015/38015-h/38015-h.htm.

[101] Though Agricola does not specifically mention the Spanish colonial endeavor, there can be little doubt that mining in the New World, and the emerging "*leyenda negra*" about Spanish brutality, were behind some of the negative associations Europeans had with mining in the early to mid-sixteenth century.

In the first chapter of his book, Agricola developed a thoroughly humanist theology of mining around the idea that God and Nature provided mineral deposits in the earth to preserve human life from a beastly existence:

> If we remove metals from the service of man, all methods of protecting and sustaining health and more carefully preserving the course of life are done away with. If there were no metals, men would pass a horrible and wretched existence … like beasts.

Agricola thus portrayed buried metallic deposits as resources for preserving human life from a bare animal existence. But given that human existence is obviously more glorious than beastly existence, he asks, "will anyone be so foolish or obstinate as not to allow that metals are necessary for food and clothing and that they tend to preserve life?"[102] At critical junctures in his unfolding argument, Agricola turns for support to natural theology:

> Those who speak ill of the metals and refuse to make use of them, do not see that they accuse and condemn as wicked the Creator Himself, when they assert that He fashioned some things vainly and without good cause, and thus they regard Him as the Author of evils.[103]

Rather than cast suspicion on mining, Agricola argues that critics of mining should be seen as the godless ones, for they are the ones who refuse God's blessings. Now that human beings know more about metallic resources in the ground, he reasons, refusing to harness them for human development would be a sign of blasphemy. Agricola states,

> Now, the man who, because they are abused, denies that wine, strength, beauty, or genius are good things, is unjust and blasphemous towards the Most High God, Creator of the World; so he who would remove metals from the class of blessings also acts unjustly and blasphemously against Him.[104]

In this way, Agricola argues that moral discernment about metallic deposits should not focus on the question of their status as resources bestowed by divine and natural powers but should instead focus on the difference between their proper use and abuse. He shifts attention away from the

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[102] Agricola, *De Re Metallica*, 14.
[103] Ibid., 12.
[104] *Ibid.*, 19.

morality of mining to the techniques of moral mining that would ensure that the minerals endowed by the Creator would be a blessing. In Agricola, in short, we see many of the same forms of reasoning that continue today: God/Nature put rich resource deposits in the ground for human benefit; it is not mining and metals that cause wars and strife but the vices of individual users and abusers; most mining deaths, accidents, and illnesses are caused by incompetent workers and can be mitigated by expertise and proper oversight; and the ecological changes caused by mining should be seen either as beneficial, as when deforested land can be used for agriculture, or, when mining renders land permanently unusable, a loss that can be compensated for by using mining's profits to buy necessities elswhere. Key to this latter idea is the notion that beyond the lands sacrificed for mining there will always be abundant lands that could provision human needs for heat, food, and clothing. In short, against all of the traditional inhibitions against mining, Agricola taught that mining should be seen as a vocation to unwrap buried gifts that were put in the ground by God, or Nature, for human utility and the blessing of humanistic self-development. Using human reason and ingenuity to develop effective methods of unwrapping these valuable gifts was religious work.

These two examples of the Reformation and Agricola's influential text illustrate my argument that extractivism developed as an ecopolitical theology that can be understood through a priestly theology of sin. When understood alongside the figure of Cain, the fallout from the nominalist theological revolution can be said to have permitted a weakening of the theological constraints on mining activity that liberated the industrial arts from the ambivalent status they are assigned in the Genesis account.[105] In the wake of nominalism, human freedom and flourishing came to be inextricably linked with natural resource extraction. Life, increasingly understood

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[105] A parallel can be observed in the loosening of ecclesiastical constraints over usury that fueled the rise of finance capitalism, a development inextricably linked with extractivism. See Bretherton, *Christ and the Common Life*, 155.

naturalistically and humanistically, was associated more and more with the veins of ore and coal than with the veins of Christ communicated to humanity by the Spirit and the sacraments.[106] In the name of securing that life and its continuity into the near future, many a creature was offered on extractivism's altars.

This characterization of extractivism as its own kind of priestly economy of sacrifice can also be made from a different angle by saying that nominalist theology provided the metaphysical outlook from which emerged a mechanistic view of material things that, through human knowledge and mastery, could be converted into the blessings of freedom and self-development. Articulated most influentially by Francis Bacon, one of the central goals of the modern project became the mastery of nature through a form of knowledge that associated truth with effectiveness. According to Gillespie, "The nominalist revolution gave birth to a new vision of metaphysics that opened up the possibility that human beings need not merely accommodate themselves to the natural world. Instead they could become masters of nature and reshape it to meet their needs through the methodological application of will and intelligence."[107] The material world, in this view, is like a storehouse of resources and potential resources to be actualized *via* science and technology in carrying out human projects. The world was increasingly seen as mechanistic matter that could be manipulated to serve rational projects and goals by human beings who increasingly possessed godlike powers and freedoms, including the priestly power to transform (transubstantiate?) matter into blessing. Herein lay the roots of modernity's subject-object distinction that located the fully human on the side of freedom and the natural, as matter

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[106] My argument is not that extractivism replaced faith in Christ but that conceptions of life—and the source of life—changed in theologically, ecologically, and politically significant ways. For example, one of the most powerful arguments in support of fossil fuels today rests on the argument that fossil fuels—first coal and then oil and natural gas—have been the single most important factor in extending life expectancy and economic prosperity: We owe our abundant life to fossil fuels. See Alex Epstein, *The Moral Case for Fossil Fuels* (New York: Penguin, 2014).

[107] Gillespie, *Theological Origins*, 280.

that followed fixed laws, on the side of passive necessity. As ecofeminists and critical race theorists have pointed out, this basic division between agential and passive matter also governed intrahuman relations: Some human beings who were more closely associated with passive matter, such as indigenes, peasants, miners, and women, could also be mined for resources, like energy and labor, to carry out other human beings' self-development projects. Natural resources and human resources emerge together within the terms of a mechanistic metaphysics that underlies the techno-scientific practices of transforming matter into blessing.

The further point to be made under this heading is that there is a particular connection between liberalism and extractivism, which is that modern political and economic conceptions of human liberty were funded by an extractivist conception of nature. Scholars such as Gillespie have examined the connection between nominalist theology and modern liberalism. Liberalism became a way to think about how legitimate forms of order could possibly emerge from ontological individualism. Since God could no longer be thought to fill that role, newly discovered conceptions of human will and the laws of nature were called upon to do the work. This is seen not only in the development of social contractarian liberalism, as in Locke, but also in the economic vision of liberalism later articulated by political economists, such as Adam Smith. Whether it was a political sovereign instituted through a social contract or an invisible hand functioning through market forces, free social orders were the product of humanity and/or nature, especially as these were invested with attributes previously ascribed to God.[108]

Most important for my purposes is that these conceptions of liberty depended on a particular view of nature as a storehouse of resources for human self-preservation and advancement. Lockean liberalism addressed this through Locke's theory of property and its relationship to human self-preservation. Economic liberalism addressed it through theories of the

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[108] These connections are further explored in Bretherton, *Christ and the Common Life*, 359-399.

division of labor as it "naturally" emerges around natural resource endowments (e.g. fertile soil, nitrogen deposits, coal)—the presence of these endowments determine a particular economy's place in the division of labor. Though it is widely recognized that liberalism was one of the most consequential fruits of the nominalist theological revolution, liberalism's ecological corollary remains relatively under-examined. Wittingly or not, liberalism wedded together the mastery of nature with human freedom. The ecological corollary to political and economic liberalism was extractivism, which provided the material conditions of human liberty. Extractivism predated liberalism, but it was wedded to it as its material source of preserving natural life and liberty. In political liberalism, it was the effectiveness of private property ownership in preserving natural life and liberty that formed the basis of legitimate government (and, in Locke's case, the higher right of Europeans to indigenous lands in the colonies). Liberalism developed in and with the enclosure of the commons to secure the most efficient extraction of commodities, such as wool and coal. In economic liberalism, it was the raw commodities extracted and produced from the earth that created the basis of a commercial society's wealth and the spontaneous order that self-interested individuals generated through buying and selling in markets.

Though socialists and Marxists later challenged some liberal doctrines, they nevertheless largely adopted liberalism's extraction-sourced vision of human freedom and just order. Extractivism predated and survived ideological conflicts between liberals and socialists.[109] Liberal and state-socialist forms of extractivism both cut off matter from its communicative relations with the Creator and confine it to its determination by human individuals or societies, the natural life of which are preserved and advanced by converting matter into blessing.

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[109] This is one of the central criticisms of Marxism and socialism by indigenous thinkers.

C. Fueling and Feeding Disordered Desires

In addition to deepening an understanding of extractivism as a defiling act of commodification and a method of preserving natural life and liberty, a theological analysis also contributes to understanding extractivism as a response to demand, which is a matter of human desire. It is the loving of created goods as if they were God, the source and end of all created goods and the giver of life.[110] Theologically speaking, in this framing, extractivism is a species of idolatry. It promises to satisfy our desires if only we would make sacrifices to it, but those sacrifices only result in tightening the grip the idol has on us to the point that we come to read extractivism's curses as blessings. We confuse true and false sacrifices.

On this point, *extractivismo* theorists may have some theological warrant for interpreting extractivism as a diabolical ecopolitical theology. Though they seem to use diabolical and demonological imagery primarily to shock, these concepts have a rather technical and demystified meaning in theological speech. They have to do with that which opposes the purposes and activities of the Triune God; they have to do with the counter-kingdom to the Kingdom of God. In part, these oppositional forces twist human desire for good things into the means of entrapment in bondage and sin. They bind creatures together in ways that oppose God's purposes. They constitute political ecologies that are opposed to God's economy of creation and salvation.

Demonology, for example, is central to Augustine's account of how to discern the difference between true and false sacrifices. His treatment takes place in the context of a problem in ethical discernment. Confronting the problem of how to discern whether a particular call to sacrifice has come from a demon or an angel, Augustine suggests that one can discern between

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[110] This kind of reasoning is also the basis of Augustine's distinction between *usus* and *frui* in *De Doctrina Christiana*, I.22.

demons and angels by where they invite human beings to direct their sacrifices. If directed to channel the blessing back toward the self—that is, to satisfy one's desire to control the future—then the invitation is surely from a demon, for such sacrifices simply tighten the grip of vice and injustice on the deceived peoples, confusing their conceptions of good and evil. The idea that the way beyond extractivism is through extractivism—Acosta's "diabolical circle"—is a perfect case in point. It asks that one valorize what many recognize as unethical acts (e.g. sacrificing lives and lands) in order to ultimately use the resulting economic growth to fix the damage. The means themselves produce more poverty and suffering, which then require more growth and revenue through extraction to fix them, etc. And the fallacy is that by continuing and intensifying these sacrifices a people will bring about their desired future, the pseudo-eschatological state called development. All this is to be expected, according to Augustine, since all sacrifices—even false ones—are binding in some way. Even the false sacrifices through which human beings try to coerce the forces of heaven and earth into satisfying—rather than healing—their sinful desires are productive. Augustine names in particular the politically constructive power of the desire to exert one's will over others and the desire to try to control history (future blessing). Peoples and lands are bound together by these logics of domination and control, a situation in which people understandably become suspicious of one another. For Augustine, false sacrifices pacify societies—rather than constitute peaceable societies—in order to sustain sinful desires; they constitute societies lacking in peace, justice, and love.[111] For Augustine, the problem lies not in the goodness of the things desired but in the disordered heart that desires good things in the wrong way: The disordered heart is willing to do evil things to access real goods. One becomes willing to sacrifice others either to secure these goods or to appease his or her own unsatisfied

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[111] Saint Augustine of Hippo, *The City of God*, trans. William Babcock (Hyde Park, NY: New City Press, 2012), 19.24.

desires. In Augustine's account, Cain's scapegoating of Abel is prototypical of the kind of sacrifices that bind peoples together in disavowal of their own agency: They sacrifice their kin and blame the victim in order to satisfy, not heal, their debased desires.

To understand this scapegoating dynamic better, I need to bring in the work of René Girard. The kind of scapegoating I just referenced above has more to do with Girard's social theory of sacrifice than with the ancient Hebrew ritual of releasing a scapegoat into the wilderness. Scapegoating is Girard's way of naming the kinds of sacrifices that constitute cultures and civilizations, even the modern social orders that are sometimes imagined as having superseded sacrificial logics. Girard, perhaps unwittingly, echoes much of what Augustine taught about desire and (false) sacrifice, finding at the roots of sacrifice and society the issue of disordered desire. But whereas Augustine emphasized the God-human relation in his account, Girard's psychological approach attends to how it is that desire is socially mediated; it is mimetic.[112] At its most basic, one comes to desire the same object that another desires, and this creates the conditions for a potential rivalry and conflict; enter a third person who also mimics a desire for the object and, since they cannot all have it, the rivalry spills over into violence. Two gang up on and violently expel the third, who is thought guilty of something and therefore deserving of punishment, and this temporarily satisfies their desire and binds them together in relative, temporary harmony. This is what Girard calls the scapegoat mechanism, and he thinks it sheds light on everything from culture, religion, and politics to immigration, literature, and climate change. The scapegoat mechanism stabilizes or pacifies unjust orders through temporary, insufficient satisfactions achieved by exclusionary violence done to victims. However, this mechanism fails ultimately to address the root issue of desire. Though Girard wrongly identifies

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[112] An early and concise treatment of the intersection between Girard's theory of mimetic desire and the scapegoat mechanism is found in René Girard, "Mimesis and Violence: Perspectives in Cultural Criticism," *The Berkshire Review* 14 (1979): 9-19.

scapegoating with sacrifice, and therefore sets sacrifice/order in opposition to Jesus/justice, his theory nevertheless does illuminate the social mediation of desire that culminates in what I have been calling false sacrifices.

What Girard's theory so illuminates is the matter of market demand. Acosta, an economist, sees demand as a crucial element of extractivism: Extractivism refers to removing and (usually) exporting raw materials to the "blessed" and "successful" peoples that demand them.[113] Not only does demand generate sacrifices, but so does the desire of "cursed" and "unsuccessful" countries to enter the blessed community of the developed. The desires of nations are thus bound by developmentalism, which creates the conditions for more scapegoating. As for liberal conceptions of order, Girard's theory shows the extent to which even a *laissez-faire* commitment to spontaneous order through market relations weaves sacrificial violence into the very fabric of society. The social manipulation and generation of desire creates demand for false sacrifices that ultimately fail to satisfy. Somebody (the poor) or something (the earth) bears away the costs that the whole order generates. In Girard's account, cultures and political-economic orders, such as extractivism, form around unconscious attempts to address the rivalries created by mimetic desire; they require sacrifice zones or what we might call, in Girardian terms, scapegoat zones.

In short, Augustine and Girard both theorized the role of disordered desire and (false) sacrifices in binding societies together. But whereas Augustine focused on the theological relationship between the sacrificer's desire and God, Girard's work shows the degree to which disordered desires are formed, communicated, and addressed through social relationships with respect to objects of desire. The desired object, according to extractivism theory, is an imagined state of development the pursuit of which drives nations and peoples to falsely sacrifice lives and lands.

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[113] Acosta, "Post-extractivismo," 295.

A further set of insights about the hidden and ecological dimensions of the violent sacrifices binding together even modern societies comes from the perplexing French Catholic counter-revolutionary thinker Joseph de Maistre. De Maistre is recognized by some as the first modern anthropologist of religion and society, as a predecessor of Durkheim and Girard. A brief summary of his theory of sacrifice and society contributes to understanding extractivism's violence as a product of human desires that demand false sacrifices.[114] Rooted in a theological and social scientific analysis of desire, his theory directly countered liberal thinkers in his day who taught that social problems could be overcome by education and rationality. Though I find in de Maistre perceptive and invaluable observations about the hidden, ecological sacrifices that constitute liberalism, I reject the authoritarian conclusions he drew from those observations and the uses to which his thought were later put by European fascists.

De Maistre observed that while the liberal moderns of his day took pride in having overcome the religious violence of the *ancien régime*, sacrifice continued. Like Augustine before him and Girard after him, de Maistre also saw sacrificial violence as a constitutive aspect of all historical societies, even the rational and "enlightened" society that the French revolutionaries sought to bring about in his day.[115] In fact, he thought modern societies unleashed sacrificial

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[114] The cultural anthropologist Eric Gans said of de Maistre that he "deserves to be called the founder of anthropology as a minimal originary theory. De Maistre expresses in a religious vocabulary a Hobbesian pessimism about human desire. What makes him an anthropologist as well as a political philosopher is his focus on what the Enlightenment had ignored: the sacred generative center of all human society, to which we characteristically relate through *sacrifice*. If Rousseau is the precursor of Boas and Geertz, de Maistre is that of Durkheim and Girard. Like Girard's *Things Hidden since the Foundation* (1978), de Maistre's *Eclaircissement sur les sacrifices* (Explanation/Clarification about Sacrifices), published as a supplement to his posthumous magnum opus, *Les soirées de Saint-Pétersbourg*, applies the central insights of Christianity to historically existing institutions. In contrast with Rousseau's anecdotal use of data, de Maistre argues from a corpus of sacrificial rites ranging from classical antiquity to the Aztecs." Eric Gans, *The Scenic Imagination: Originary Thinking from Hobbes to the Present Day* (Stanford, CA: Stanford University Press, 2008), 107-08.

[115] The scare quotes around "enlightened" are used here to reflect the way that de Maistre plays with the idea that his contemporaries concealed very unenlightened actions within a veneer of high idealism.

violence beyond measure. In the realist vein of Hobbes and Machiavelli, and against liberals' sanguine anthropology, he affirmed a necessary role for limited, ritual violence and sacrifice in order to keep self-divided human individuals and societies from descending into limitless killing. Far from having eradicated sacrificial blood-letting, the "enlightened" not only frequently moved their sacrifices out of view; they also failed to keep them within limits through religion and ritual. The Reign of Terror is his favorite case in point. Unlike in Girard's theory, where sacrifice is a wholly negative concept, de Maistre sees sacrifice as fundamentally ambivalent; it is a necessary evil that, by divine providence, keeps greater evils in check. Though I reject his providentialist account, he nevertheless was right to see divergent possibilities for addressing the desires that drive sacrificial violence in historical societies. De Maistre thought that the "decree of violent death written on the very frontiers of life" could either be redeemed, as in Christ's sacrifice and the non-bloody sacrifice of the Mass, or it could remain unredeemed (in my terms, false), as in the limitless killing of human beings and animals to try to satisfy our limitless desires and demands.[116] After a long, grotesque reflection on the amount of killing enlightened societies rely on for their science, food, clothing, sport, aesthetics, and even mere amusement, he concludes that modern, enlightened

> Man demands everything at the same time; he takes from the lamb its entrails to make his harp resound, from the whale its bones to stiffen the corset of the young girl, from the wolf its most murderous tooth to polish his pretty works of art, from the elephant its tusks to make a child's toy; his tables are covered with corpses.[117]

Though they sought to eradicate religious and ritual sacrifice from the sphere of public life, De Maistre thought modern liberals actually naturalized sacrifice by writing it into the very fabric of freedom and progress. Even more condemning, they invisibilized those sacrifices, preferring to

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[116] Joseph de Maistre, *St. Petersburg Dialogues, or, Conversations on the Temporal Government of Providence*, ed. and trans. Richard A. Lebrun (Montreal: McGill-Queen's University Press, 1993), 216.

[117] Ibid.

keep them out of view, in order to assure themselves of their moral progress. De Maistre thus demonstrates that sacrifice's modern critics perennially failed to overcome sacrifice. Instead, they often naturalized, invisiblized, and unleashed it at unprecedented levels.

The quote above by de Maistre also contributes to an ecological analysis of the modern as an economy of sacrifice. He argued that the mass killing of animals for human use, advancement, knowledge, and pleasure was part and parcel of the fabric of "enlightened" sacrifices. Though our more recent use of plastics, metals, and chemicals derived from petroleum, mineral, and other non-animal sources might tempt us to think that technological advancements have minimized these sacrifices, the current ecological crisis suggests otherwise. Technology has certainly impacted the spatial and temporal displacement and concentration of ecological sacrifices. However, the displacement of sacrifice seems a far cry from its overcoming. While modern social, economic, and intellectual life may have sought to overcome religious and ritual sacrifice, de Maistre's insight is that it seems to have simply redistributed and even intensified sacrificial violence.

For de Maistre, the root cause of all this bloody sacrifice was anthropological. It stemmed from the warring desires and divisions within the human self. Rather than contain and heal these inner conflicts through religious ritual, modern societies instead freed them from ritual-theological constraints and thus unleashed regimes of limitless killing—usually out of sight, though sometimes erupting in plain view. While I do not share de Maistre's providential theology of sacrifice as a kind of restraint on disordered desire best overseen by a virtuous leader, his theory nevertheless helps to name the roots of sacrifice's modern ubiquity within the terms of a theology of sin and disordered desire—one developed long before Freud—that cannot be rooted out by a liberal regime of education. Rather than conceive of European modernization as a movement from sacrifice and ritual to enlightenment and reason, de Maistre sees it instead as a

conflict between one set of ritual sacrifices and another: one set has the power to bring peace to the human heart rent by desires (and thus to society in general) and the other set unleashes the heart's disorder into the social order as an unrestrained license to kill.

Augustine, Girard, and de Maistre contribute to a theological understanding of how desire creates and communicates demand for extractivism. Though developed in very different historical contexts, their insights nevertheless converge in affirming that the sacrifices constituting our extractivist political ecology strike at a deeper level than liberal, techno-scientific, and managerial solutions alone can address. Beyond simply technical and policy matters, extractivism's sacrifice zones are the product of sin-sick desires that demand that the world be turned into a resource to satisfy our insatiable wants.

They also contribute to understanding the ways that extractivism is reproduced by hiding the sacrifices that our desires generate. If turning creatures into resources must entail some kind of sacrificial violence, these thinkers show what lies behind our preference that the violence be kept out of sight—in another country or in a factory, for instance, or in the marginal neighborhoods of Birmingham or behind a ridge in West Virginia.[118] Or maybe even buried deep within research methods. Perhaps Augustine was onto something when he theorized that things done in secret tend to be shameful things.[119] The desire to keep extractivism's violence out of sight helps to understand why Restoring Eden's work of making visible the human costs of coal has become a battle between the anti-MTR camp and the pro-MTR camp. While the former point to the locally gathered data that makes the costs of coal visible, the latter camp has prioritized the use of large quantitative data sets that tend to bury hyper-localized realities within tiny

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[118] Many activists against mountaintop removal see evidence of MTR's moral status in the coal industry's practice of selecting ridgelines for removal that are out of view of highways and other publicly visible areas. Out of sight, out of mind.

[119] Augustine cites approvingly a saying of Cicero, that "all right actions want to be placed in the full light of day" in *City of God*, XIV.18.

differences in percentage points. In other words, industry-funded research using quantitative analysis has tended to conclude that results are inconclusive. In chapter five, I address this dynamic further in conversation with scholarship in science and technology studies that portrays scientific practices as visualization technologies that, by making things visible in charts, graphs, numbers, and other scientific visualizations, insert those things into ethical and public deliberations. My suggestion here is simply that industry-funded research may prefer to use the kinds of methods that both satisfy the demands of scientificity—for instance, analysis of large quantitative data sets may establish legitimacy by appearing more law-like—and yet effectively keep particular and hyper-localized realities invisible.[120] In such a contest over visibility and invisibility, feminist conceptions of sin as blindness make common cause with Augustine's suspicion of actions done in secret: Both suggest that our practices of making things visible or invisible are morally and theologically significant.[121]

D. A False Christocentrism and Eschatology

Developments in Black theology suggest that even more than a matter of anthropocentrism, extractivism might more accurately be seen as a structure stabilized by a false Christocentrism that posits one particular subject as the origin and goal of history. The problem at the center of extractivism is not "the human," understood as a distinct species within the world, but a very particular human subject who has overdetermined the general category of the human. This subject functions much like the person of Jesus Christ.

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[120] County-level health data, for instance, lacks the granularity needed to examine the health effects of living right next to an MTR coal mine.

[121] See footnote 87 above.

James Cone's brief but influential contribution to ecotheology is illustrative of this point. He theorizes that extractivism is an ecopolitical theology of sacrifice when he specifies that human and otherkind creatures in this modern era have been turned into resources not just for human projects but for specifically white supremacist projects. In his article "Whose Earth is it Anyway?" Cone argues that extractivism is constituted by a theology of creation and eschatology oriented by whiteness: Because creatures are believed to be created for white ownership and perfected by white consumption, the act of resourcifying the world—turning all things into potential or actual resources to achieve this task—itself becomes a form of faithfulness.[122] Though Cone deploys a racial analysis, the same can be said for other forms of analysis, such as gender or class. The point, however, is that the subject of freedom and self-development at the center of modern extractivism is not "the human" *per se* but a very particular idealized subject who needs to be provincialized as European, male, middle class, and so on. Black and other liberationist theologies aid this provincializing in order to free Christian truth and proclamation from its captivity by this centering and centered subject.

J. Kameron Carter takes the point further. Synthesizing insights from W.E.B. Du Bois, Karl Barth, and Sylvia Wynter, Carter theorizes that this centering and centered subject is "the Imperial God-Man" who mediates an idealized humanity to the rest of the world as both its center and goal.[123] In this way, the Western Man fantasized by modern thought overdetermines the category of the human by stabilizing and anchoring all humanity, nay the value of all matter, by reference to itself as center. The value of things is determined by this central figure who mediates future blessing to the world. With respect to extractivism, we can say that there is a pseudo-

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[122] James Cone, "Whose Earth is it Anyway?," in *Earth Habitat: Eco-Injustice and the Church's Response*, eds. Dieter Hessel and Larry Rasmussen (Minneapolis: Fortress Press, 2001), 23-32.

[123] J. Kameron Carter, "An Unlikely Convergence: W.E.B. Du Bois, Karl Barth, and the Problem of the Imperial God-Man," *CR: The New Centennial Review* 11, no. 3 (2011): 167-224.

Christocentrism operating in extractivist ecopolitical theology. It construes the world as teleologically ordered toward an imagined God-Man, effectively turning it into property to be possessed and used by this God-Man. All matter is thus rendered sacrificable. In Carter's estimation, even Christocentric theology is not immune to becoming a conduit for perpetuating false sacrifices of life and land in the attempt to stabilize and control the direction of history. To say that Christ gets us out of the mess of modern crises is not to have said enough. One must specify which Christ is in view. Borrowing categories developed during the Harlem Renaissance, one might ask, "Is it the White Christ or the Black Christ?"[124] In this approach, the Christ that came to occupy the center of European theology, particularly liberal Protestant theology stemming from Friedrich Schleiermacher, was, as Ludwig Feuerbach noted, a glorified and hypostatized projection of an idealized European subject. Bringing this analysis back into conversation with extractivism, it can be argued that insofar as this kind of pseudo-Mediator stabilized an extractivist ecopolitical order, extractivism was never actually anthropocentric, as if humanity in general were the organizing center. Rather, it might better be thought of as Man-thropocentric, if by Man is meant this idealized centering and centered modern subject. Building on the observation I examined by Anthony Bebbington earlier about the way resource extraction spins off demonologies and angelologies, the point to be made here is that extractivism does generate its own spiritual figures that serve to orient collective life. Generating not only politically significant relationships with demons that trap people in resource curses or promise some technological escape from the curse, extractivism most fundamentally creates its own Christologies that offer salvation and redemption through movement toward some messianic figure who mediates blessing to the world.

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[124] For an in-depth exploration of Harlem Renaissance Christology and its influence on Dietrich Bonhoeffer's Christocentrism, see Reggie L. Williams, *Bonhoeffer's Black Jesus: Harlem Renaissance Theology and an Ethic of Resistance* (Waco, TX: Baylor University Press, 2014).

Willie Jennings works within this tradition to foreground the relationship to land, further demonstrating the extent to which extractivism functions as both a social and an ecological form of dis-memberment. In his examination of the theological origins of race, Jennings argues that the practices of extracting people from the places that formed their identity helped to render place theologically irrelevant while also displacing identity from land to skin.[125] Skin, then, according to an ontological hierarchy with an idealized white subject at the top, became a marker of proximity or distance from God's salvation in Christ. In other words, whiteness subverted the possibilities for new forms of membership—Jennings refers to these as "intimacy"—with one another and the land made possible by the story of Jesus Christ. In this view, racial and environmental injustices are both caught up within the complex rifts that developed between human identity, land, and theology during the colonial period. Whereas Carter argues that a pseudo-Christocentrism centers a particular eschatology, Jennings thus demonstrates that it also configures a particular spatial order with uneven blessings and curses.

E. The Mythos of the Modern Nation-State

Finally, extractivism has been written into the *mythos* not only of modern freedom but also of the modern nation-state; as a powerful political theology of sacrifice, extractivism has provided the modern nation-state with an orienting, purposive narrative. This is the thesis of East African political theologian Emmanuel Katongole. His analysis of the nation-state's performance in Africa can be applied to modern political theology in general. My engagement with Katongole also serves here to point beyond this chapter's theological critique of extractivism as false sacrifice toward the following chapter on a constructive political ecology of sacrifice. This is

[125] See Jennings, *The Christian Imagination*.

because Katongole makes a distinction—one that echoes Augustine's—between "sacrificing Africa" and "the sacrifice of Africa." He argues that contemporary African politics are best understood in terms of radically opposing political theologies of sacrifice: one that renders Africa and Africans disposable through the extractivist nation-state ("sacrificing Africa") and another that renders African life sacred through bearing witness in speech and action to God's dealings with creation revealed in Christ and the Spirit ("the sacrifice of Africa").

According to Katongole, the extractivist *mythos* of the nation-state has so captivated Africans' social imagination that even Christian ethicists have been unable to think political existence without it. However, rather than seek to make the nation-state work better in Africa for Africans, Katongole argues that the plunder and sacrifice of Africa are not epiphenomena that can be mitigated; rather, they are signs that the nation-state project has been exceedingly successful on the continent. Yet, even though he rightly locates the roots of the extractive nation-state in European colonialism, his is no Manichean account of struggle between oppressor and oppressed. The nation-state project cannot be understood as simply an imposition from outside; rather, it has been embraced, contested, and adapted by Africans in diverse ways across the continent. Even the post-colonial nation-state embraces a narrative of civilization that accepts the disposability of African lives as official state policy. He points to the rubber trade in King Leopold's Congo as an example: Leopold's highest civilizing ideals had their underside in the mass wastage of and brutality against African life and land. For Katongole, Leopold's Congo is indicative of a more general phenomenon that African lives acquire their meaning and value only in relation to civilizing missions that sacrifice lives in pursuit of political ambition and greed. Insofar as the post-colonial nation-state is mythologically oriented toward a future goal of development or civilization reachable through the death-dealing sacrifices of resource extraction, it binds African lives and lands in the same webs of violent sacrifice. In Leopold's Congo, writes Katongole, "a

new claim regarding African lives is being announced and enacted: namely, that these are not unique, precious, sacred lives; these are Africans, mere bodies to be used, mere masses to be exploited.[126] The extractivist state is constituted by a political theology of sacrifice because it continually enacts a story about how present sacrifices will bring about a future state of peace and prosperity. Today's sacrifices are made to control the future. Extractivisms adopt, adapt, and enact this nation-state story in many and various ways.

However, Katongole also discovers another story of sacrifice in Africa. He sees in the proclamation and embodied practice of African Christian communities a different story of sacrifice that holds the promise of an alternative future and social imagination that together might save Africa from King Leopold's ghost. Attending to such communities, he argues that

> The Christian story … makes possible the practices and communities that in turn make possible a new sacrifice of Africa (in the sense of the Latin root of sacrifice, which is 'to make sacred': *sacra* + *facere*), and is thus able to interrupt the wastage (sacrificing) of Africa assumed within the founding narratives and institutions of modern Africa.[127]

His point is that the prevailing political theology of sacrifice, which makes the massive waste of lives and lands acceptable, is an attempt to secure or control future blessing, while a political theology that renders African lives and lands sacred opens the future up to the possibilities of God's transformative work in and with God's creatures.

I bring this theological analysis of extractivism to a close by returning to Augustine's framework in *The City of God*. Though Katongole does not directly draw inspiration from Augustine, he nevertheless demonstrates the analytical possibilities opened up by pursuing the kind of hermeneutical aid to Christian political witness that Augustine outlined: two opposing kinds of sacrifice bind together two different cities centered around two different anchoring

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[126] Emmanuel Katongole, *The Sacrifice of Africa: A Political Theology for Africa* (Grand Rapids, MI: W.B. Eerdmans, 2011), 17.

[127] Ibid., 25.

subjects that are intermixed in history yet ultimately heading in different directions. Though Katongole has post-colonial Africa in view, his theory has much broader application because the *mythos* that gave shape to the post-colonial nation-state in Africa was historically rooted in European expansion and exported in a relatively stable form to be embraced, adapted, and contested in unique ways across the globe. What Europeans did in the colonies, the places where they tried to concentrate the sacrificial underside of the nation-state, revealed something more general about the character of the progress and enlightenment they were cultivating in and through the nation-state. European and American dreams of a civilizing empire had their underside in the sacrifices kept out of view in the jungles of central Africa and elsewhere. Katongole helps us to name the dynamic, especially as it plays out in different ways and at different scales in each place, as a contest between rival political ecologies of sacrifice.

Conclusion

Concluding this theological critique of extractivism, I can summarize the key features of extractivism as an ecopolitical theology of sacrifice that has its figurative representation in the figure of Cain and its historical roots in Europe and its colonial expansion. The historical sin of extractivism that took shape during a particular moment in European history is now a temptation for contemporary societies across the globe. It is built on the false sacrifice of converting human and otherkind creatures into resources that can be used and wasted in pursuit of securing an abundant future of peace, prosperity, and development. It dis-members creatures from their membership in God's economy of creation and salvation and reorients their being and *telos* around efforts to secure abundance and control the future. The consequence of this pattern of false sacrifice is that human and otherkind matter are defiled and bound together in ecopolitical orders that naturalize and invisibilize mass death and wastage as the lamentable costs of freedom

and abundance. Underscoring the fact that this ecopolitical order is an instance of idolatry, it is an order stabilized by particular objects of desire—including those I canvassed above, such as development, Man, and freedom—that promise to give life but actually unleash death-dealing forces. Though its key motivating force derives from its salvific promise, it is actually leading the nations toward their own destruction. The concepts of climate change and Anthropocene are popular ways to name this destruction, but I have argued that extractivism is a better way to frame the dual social and ecological crises that threaten to envelop the planet. Extractivism invites us to direct our empirical, moral, and theological attention not primarily to the hole in the sky but to the holes in the ground, in our ecologies, in our societies, and in our hearts.

At the beginning of this chapter, I framed this exploration also as a corrective to Rob Nixon's concept of slow violence. While I have shown that violence is certainly a central aspect of extractivism, the concept of slow violence nevertheless requires further specification if it is to be a useful aid to ecopolitical witness. Having argued that extractivism is a political ecology of false sacrifice, the primary challenge is not to speed up slow violence through creative forms of representation, for the concept of violence is both morally underdetermined and implies a personal form of enmity. The challenge is rather to visualize and speed up the slow sacrifices that constitute and bind together our ecopolitical order as an order of life. This order is composed of slow sacrifices, or more specifically slow, false sacrifices. No personal enmity is required. And there is no need to represent all of the relevant phenomena as instances of violence. But they are certainly unjust. They constitute an order that naturalizes, invisibilizes, and rationalizes its sacrifices in the name of growth and progress.

Yet, as Augustine and Katongole each articulates in his own way, this is not the only ecopolitical theology at work in history. We can take it on faith that God is indeed making a different future possible through a different sacrifice that binds together lives and lands in a way

that opens them up to God's purposes in creation. For the sake of clarity and in an effort to reconceptualize sacrifice in positive terms, I will use the neologism *sacrafice* to refer to the kind of sacrifice that makes possible a different kind of political ecology in which human and otherkind creatures are bound together by Christ's life, death, and resurrection. Are any witnesses to this *sacraficial* economy of God to be found in contemporary history? I have been suggesting throughout this dissertation that I think there are some elements of the Restoring Eden citizen science projects that bear this kind of witness. They are far from alone. In fact, I will argue in the next chapter that they are part of a Christian tradition of responding to false sacrifices with the *sacrafice* of truth-telling.

Chapter 4. Cross-Examining the Witnesses: A Priestly Political Ecology of Truth-Telling

The church's most vexing problem today is how to define itself by the gospel of Jesus' cross.
- James Cone[1]

The way to rethink sacrifice is in terms of power.
- Fleming Rutledge[2]

Jesus suffered outside the gate in order to sanctify the people through his own blood. Therefore let us go to him outside the camp and bear the reproach he endured. For here we have no lasting city, but we seek the city that is to come. Through him then let us continually offer up a sacrifice of praise to God, that is, the fruit of lips that acknowledge his name. Do not neglect to do good and to share what you have, for such sacrifices are pleasing to God.
- Epistle to the Hebrews[3]

With Jesus there came a fundamental shift in the location of salvation. … The unclean and defiled territory became holy ground as he took upon himself the function of the temple. … Jesus died to 'sanctify the people,' that is, to set them apart for ministry. … Jesus died 'outside the gate.' … [But this] periphery, the wilderness, the world of sin and evil, of suffering and injustice, is not seen as a permanent dwelling. Service therein is a checkpoint on the way to the new Jerusalem, symbol of the new creation: the definitive transformation of the world by the power of God.
- Orlando Costas[4]

I argued in the last chapter that the sacrifices that constitute extractivism's political ecology are false. But this conclusion was not self-evident. It was a judgment informed by the theological affirmation that true sacrifice is revealed in the person and work of Jesus Christ. In this sense, the meaning of creaturely life, and an evaluation of what its flourishing costs, are matters of revealed reality. In the economy of salvation, the true meaning and efficacy of false sacrifice is revealed in its very moment of overcoming by Christ's one true sacrifice that culminated, as the author of

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[1] James Cone, *The Cross and the Lynching Tree* (Maryknoll, NY: Orbis, 2011), 163.

[2] Fleming Rutledge, *The Crucifixion: Understanding the Death of Jesus Christ* (Grand Rapids, MI: W.B. Eerdmans, 2015), 273.

[3] Hebrews 13:12-16.

[4] Orlando Costas, *Christ Outside the Gate: Mission Beyond Christendom* (Maryknoll, NY: Orbis, 1982), 189-193.

Hebrews put it, in his death "outside the gate" of Jerusalem. This place "outside the gate" was at once also inside the execution zone of Golgotha, the place of false sacrifice, where Jesus was scapegoated to preserve an unjust peace.[5] As both outside the life of the city and inside the false sacrifice zone, Golgotha was taken up into the economy of salvation when Jesus Christ made it the place where his one true sacrifice restored the polluted air and defiled soil for the creature's new life in a habitat of grace. In this, Jesus Christ unleashed a world-transforming power. As Costas states in the epigraph, the defiled place became a waypoint on Christ's, and therefore our, journey toward the New Jerusalem, the garden-city of God. As salvation in Christ passes through the false sacrifice zone, so does the Christian's calling. My task in this chapter is to elaborate this Christological, soteriological approach to environmental justice.

If we understand sacrifice zones as the places where we concentrate our extractivist economy's slow, false sacrifices—its dis-memberment and defilement of creatures—then what forms of speech and action might bear witness to the revealed reality that God in Christ re-members dis-membered and defiled creatures? Is there any reason for hope that extractivism's dis-membered creatures can be re-membered to the life-giving political ecology of God? Is there any hope that the falsely sacrificed and the false sacrificers—sometimes one and the same—can be restored to one another, to the community of creatures, and to the Giver of Life? If there is reason for such hope, what kinds of practices might bear witness in this sacrifice-suffused world to the revealed reality that all things are becoming on earth as in heaven, that is, the habitat of divine Life?

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[5] Biblical scholarship largely affirms, though not without contention, that Golgotha, the "place of the skull," was a place outside Jerusalem's city gates where executions were performed and where the carcasses of animal sacrifices were disposed of. As for my reference to Golgotha as also a site of scapegoating in the Girardian sense, the Gospel of John has the high priest Caiaphas describe the logic behind the plot to kill Jesus, "It is better for you that one man should die for the people, not that the whole nation should perish" (John 11:50). To underscore its significance it is repeated again in the context of the passion narrative in John 18:14.

To answer these, in this chapter I complete the ecopolitical hermeneutic begun in the last chapter. Informed by my fieldwork with Restoring Eden, in particular my analysis of their concept and practice of citizen science as restorative truth-telling, I am developing this hermeneutic as an aid to ecopolitical witness in time, one that is patterned after Augustine's *City of God*. As Augustine dedicated Books II-X to a critique of Roman political religion and its sacrifices and Books XI-XXII to a constructive theology of the heavenly city on pilgrimage among the earthly city, I have divided this hermeneutic into two chapters. In the last chapter, I gave an account of what it is that creates a need for restoration. I argued that extractivism is a particular sin that lies behind us in history as a shaper of our contemporary, interrelated social and ecological crises, and that it also lies before us as a temptation to sustain our own abundant lives and lands at the expense of others' lives and lands. It functions, in other words, as a good news story that rivals the gospel of Christ. It is a sin best understood as a system of false sacrifice—figuratively represented by Cain—that has defiled lives and lands in pursuit of securing its own future blessing. I also reworked the concept of slow violence, which figures environmental injustice as part of a cosmic battle, to understand extractivism's injustices instead as slow sacrifices offered to an idol: The idol of extractivism is Moloch, not Marduk. Whereas the last chapter developed the critical side of the hermeneutic to explore the dynamics that create a need for restorative truth-telling, the current chapter examines the restorative power of truth-telling as a Christian practice by developing the constructive side of the hermeneutic. This ecopolitical theology of *sacrafice*—the neologism, once again, referring to the Latin (*sacra* + *facere*, to make sacred)—serves to prepare for the final chapter that explores how scientific practices relate to faithful, loving, and hopeful action in this age of extraction.

My thesis here is twofold. It weaves together both normative and descriptive arguments. The normative thesis is that the task of bearing truthful witness ought to be oriented by God's

way of re-membering falsely sacrificed and sacrificing creatures to the garden-city—that is, the political ecology—of God. As God revealed what is true about Godself and creation in moving toward the sacrifice zone of Golgotha and transforming it into a sacred zone, where the lowly are exalted to new life in a habitat of grace, so should Christians orient their environmental practical reasoning by their priestly vocation to bear witness to God's gracious act for us in Christ the true Priest. This priestly frame of reference situates the concept of sacrifice within a wider set of associations that I develop into a Christocentric political ecology of *sacrafice* and against which I juxtapose natural theologies of sacrifice. The descriptive argument is that Restoring Eden's practice and norm of citizen science in coal's sacrifice zones should be understood as part of a priestly Christian tradition of responding to false sacrifices with technologies of truthful testimony that, rather than seeking to speak truth to power, invest truth-telling with the power to re-member the falsely sacrificed to the community of life.

Recognizing the denigrated state of priestly and sacrificial imagery for understanding the work of Christ and its significance for Christian proclamation and witness today, the provocation of this chapter is nevertheless to argue in favor of integrating the priestly office of Christ and the priestly vocation of Christians into Christian ecopolitical theology.[6] This is not an argument for one controlling concept or image, such as the human as a priest of creation, for ecopolitical theology. Rather, it is an attempt to integrate multiple concepts and images from Scripture and tradition into a robust ecopolitical theology that embraces the tensions between multiple frameworks, particularly those traditionally categorized as ecological priesthood, stewardship of

[6] This attempt to situate ecotheology firmly within soteriology shares the trajectory set out by Willis Jenkins in *Ecologies of Grace: Environmental Ethics and Christian Theology* (New York: Oxford University Press, 2008).

creation, and eco-justice.[7] As I aim to demonstrate in this chapter, the priestly frame, properly understood, is particularly well-suited to enrich ecopolitical theology and witness: It foregrounds the cosmic, relational dimensions of reconciliation; conceives of human sin in ecological terms as a spreading pollution that is cleansed or as a blockage that is removed so as to re-open communicative relations; locates the place of creation's new life precisely in its death-dealing sacrifice zones; and brings into view the human as a priestly member of the creation community whose special task is to re-member those creatures that have been extracted from the life-giving political ecology of God.

I give evidence in this chapter to support the claim that a renewed priestly theological frame (of both Christ's work and our human vocation) is essential for ecopolitical theology, in part because it corrects some of the shortcomings of prophetic and kingly frames (and their contemporary confusions). The prophetic frame is traditionally focused on Christ's teaching office and the human's truth-telling vocation, the kingly frame on Christ's triumph over evil and death and the human's vocation to act justly and overcome worldly ways. But with respect to Christ's work, the priestly frame expands soteriology to encompass relations beyond the legal metaphor's God-humanity emphasis, and it counterbalances the triumphalism of the battlefield images that largely define the kingly frame. In the realm of human vocation, the priestly frame challenges the concept of speaking truth to power, as if truth and power were locked in a ceaseless struggle. If, as I am arguing, truth-telling is to be understood as a fitting response to false sacrifice, it will be because truth-telling bears powerful witness to the revealed reality that all creatures are re-membered to God in Christ, and therefore also to one another, through Christ's work as Priest, Sacrifice, and Temple. The cross empowers otherwise dead creatures with

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[7] This threefold framework is commonly used in typologies of Christian environmentalism, as seen in the work of Laurel Kearns, Willis Jenkins, and Joseph Witt.

agency, that is, the power to act as creatures made fully alive. It is the human's priestly vocation to participate in this work of re-membering the falsely sacrificed, and in so doing to bear witness to Christ's one true sacrifice. At a moment in time like ours, when sacrifice zones are maintained and intensified through technologies of concealment that hide the true costs of coal, truth-telling itself becomes an essential aspect of this priestly vocation.

Stated otherwise, Christian practical reasoning is a matter of attuning our—meaning humanity's—threefold prophetic, priestly, and royal vocation to the particular places, times, and social locations in which we are given to act.[8] How should we align truth-telling, reconciliation, and the exercise of power today? I follow the suggestion by Fleming Rutledge that "the way to rethink sacrifice is in terms of power."[9] We need to align the prophetic task of truth-telling in a world in love with falsity and the kingly task of coming to judgment in an unjust world with the priestly task of re-membering the creatures who have been dis-membered and defiled by false sacrifices. Christ's true sacrifice binds creatures together and reconfigures their modes of belonging by a relationship between blood and soil that directly opposes that of extractivism and its false sacrifices.

The chapter unfolds as follows. First, by returning to reflect on the Restoring Eden team's visit to the lynching memorial in Montgomery, I examine the significance of the theological doctrine that the cross of Christ reveals the weight of sin in the very act of God's overcoming it.

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[8] Whenever I speak of the general concept of "humanity" I am in no way referring to something called "human nature" that can be defined and examined by natural modes of reasoning about inherent human dignity or human capacities for reason, culture, etc. Rather, I echo Barth in considering "humanity" as solely a theological category, that is, as a category of creatures defined and determined by God's covenant of grace for a special vocation. If there is anything special about humanity vis-a-vis the rest of creation, it will derive solely from humanity's status and calling by grace as God's elected covenant partner. Humanity's status and calling are not by nature, and are therefore not matters of possession. They are a gift of grace that, like any gift, can also be abused or refused. This is the way to navigate the unfortunate dichotomy between anthropocentrism and biocentrism in environmental ethics. Ecotheology and ethics ought to be, borrowing a term from Barth, "theanthropocentric," that is, centered on the Theos-Anthropos to whom the Bible gives the name Jesus Christ.

[9] Rutledge, *The Crucifixion*, 273.

The cross, I argue, reveals the poverty of natural ecopolitical theologies of sacrifice and invites a Christological approach. Before developing an ecopolitical theology oriented by Christ's priestly work, I set some initial terms for my constructive hermeneutic of *sacrafice* through an engagement with the womanist theologian Delores Williams, who I take to represent various critiques of sacrifice from the victim's standpoint. I conclude that any resolution to the contemporary theological problem of sacrifice cannot be phraseological but must also be existential, by which I mean an aid to practical judgment. In the third part, I develop a constructive ecopolitical theology of true sacrifice around the priestly dimensions of Christ's personal work and the responsive priestly vocation of Christians, the Christian community, and humanity in general. I suggest that Restoring Eden's truth-telling practices should be seen as an exemplary form of priestly witness in this sense. Finally, I argue that Restoring Eden's citizen science projects and EJI's programs in restorative community memory should be understood as part of a priestly tradition of responding to false sacrifices with technologies of truthful witness. These latter are ways of interweaving empirical, moral, and theological truths into practices of knowledge production that seek to make false sacrifices visible in order to open up and fuel public deliberations over eradicating them.

This chapter's theological account of Restoring Eden's work provides a framework for my constructive vision, in the next chapter, of citizen science as an urgent form of Christian practice suited to our time.

I. The Cross and the Lynching Memorial

To set the stage for this constructive ecopolitical theology of *sacrafice* I return to the Birmingham team's visit to Equal Justice Initiative in Montgomery, Alabama, where the team engaged the

restorative dimension of truth-telling by connecting their work on race, ecology, coal, health, and science to the Christ who went to the cross.

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Our visit to the lynching memorial is not turning out as I had envisioned it. Peter had asked me to arrange this trip to help the Birmingham leadership team situate the health study within the region's legacy of racial injustice. But the sun is merciless. On this hundred-degree, high humidity day, Montgomery, Alabama is a veritable sauna, and water bottles are not permitted in the outdoor memorial.

The wall of security guards surrounding the site's perimeter suggests the threats regularly made against this physical re-membering of the lynched. Remembrance is not neutral territory here: All over Montgomery, historical markers placed by different groups portray past events from wildly disparate perspectives. A stranger tells me there's talk of erecting a counter-memorial and Confederacy museum nearby.

Suspended above us are rusty iron caskets with the names of lynching victims by county. They appear to be rising up to heaven as our walkway descends into the hell of being confronted by each casket's heavy, inconvenient truths. Along the walls and below the caskets overhead is a horizon of plaques with obituaries that would have once been too dangerous to write: "William Miller was lynched in Brighton, Alabama, in 1908 for organizing local coal miners." "Lacy Mitchell was lynched in Thomasville, Georgia, in 1930 for testifying against a white man accused of raping a black woman." "William Stephens and Jefferson Cole were lynched in Delta County, Texas, in 1895 after they refused to abandon their land to white people." "Seven black people were lynched near Screamer, Alabama, in 1888 for drinking from a white man's well." Land, water, coal, testimony—all were wrapped into a political economy held together by extrajudicial killings that served to maintain a racialized caste system of land and bodies.

Beneath the weight of the caskets and testimonies, our group's losing focus. One of the couples leaves early. In a shady spot in the memorial, down near the reflection cascade, Peter dips a white towel in the water, puts it on his head, and falls asleep on the stairs. My arm is straining to carry his emotional support kitten. Nobody wanted to return to a sun-scorched cat in the back of the rental truck. After reading Peter's doctor's note, the staff let us bring the cat into the memorial so long as we kept her in what is starting to feel like a four-hundred pound travel carrier. I'm starting to feel as though we are as pathetic as the disciples who dozed off while Jesus Christ sweat blood in Gethsemane. The cost of life and the reality of death surround us, but we're looking for the thermostat.

Just as I'm starting to give up on our planned time of reading and reflection, our team is showing signs of revival. As we regroup, we sit on a bench by the reflection wall where we take up and read. We begin at the beginning. We read in Genesis that God fashioned the human from soil and breath, and that the human turned it to soil and death. We read about the ground giving voice to Abel's blood. We ask what it means to live with that earth today. We turn to Mark's account of a different man who fell to mob hysteria and false witness, who transformed their instrument of execution into the instrument of reconciliation. And we read about how the Apostle Peter admonished that man's followers to "stand as witnesses to all Jesus did."[10] We receive James Cone's challenge: "Until we can identify Christ with a 'recrucified' black body hanging from a lynching tree, there can be no genuine understanding of Christian identity in America."[11] And we sit with Emilie Townes's claim that concentrating toxic pollution in "black and economically disadvantaged communities" is a "contemporary version of lynching."[12] The

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[10] Acts 10:39.

[11] Cone, *The Cross and the Lynching Tree*, xiv.

[12] Emilie M. Townes, *In a Blaze of Glory: Womanist Spirituality as Social Witness* (Nashville: Abingdon Press, 1995), 55.

readings thread the health study in a Birmingham sacrifice zone to the era of lynching, and through it back to the cross as God's response to the good soil soiled with Abel's blood.

The readings inside the lynching memorial bring the day's itinerary to an end, and we start heading toward the exit.

But as we follow the walkway out beyond the shade of the reflection wall into the sun once again, we see that there is a duplicate of every iron casket from the memorial sitting exposed on the ground. For every casket hanging from the ceiling of the memorial there is another one lying here in the Black Belt sun, like the repatriated remains of fallen soldiers on the tarmac. We read on the sign that every county across the country in which a lynching took place is now responsible to actively remember the lynched. The iron caskets will remain here until each county submits an application and receives approval to retrieve and display it publicly on county property. EJI will only approve applications that provide evidence that the county is tangibly addressing its legacy of racialized violence. If they are to collect their county's iron casket, they must show that they, too, will commit to re-membering the lynched.

A few years later, Peter said that our visit to the lynching memorial was so powerful that rarely a week had gone by since then that he hadn't told someone about it. A regular in the cancer ward, where he was treated for his spreading cancer, he was still spreading the news about restorative truth-telling until the cancer took him.

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The cross is a scandal for Jews and Gentiles, moderns and postmoderns. It is a scandal that God's way of re-membering into the community of Life we who live and move and have our membership in the family of Sin and Death and Evil, is by dying a shameful, criminal's death on

a Roman cross outside the gates of Jerusalem.[13] It might seem that such a story could not be domesticated and drained of its scandal. But that would be incorrect. It has almost become a pastime that believers and non-believers alike drain the cross of its scandal, and by so draining it render it powerless or malleable to abuse; some even weaponize it. One camp invests the incarnation and birth of Jesus with the primary power to unite and elevate flesh to God. Another camp makes the cross an example of what ordinary love and solidarity ought to look like. A third makes it little more than the unexemplary but natural outcome, given the imperial context, of Jesus' life and teaching about love. A fourth camp shifts the primary attention to the resurrection or the ascension as symbols of victory and triumph over the power of death's bondage, thus rendering the resurrection a reversal of the cross. But even if there are truthful elements in these—and I think there are—they nevertheless teach us to wince at every mention of the power of blood, sacrifice, priests, offerings, lambs, scapegoats, expiation, and substitution in the Old and New Testaments. Which means that if we are going to read the Bible, then we will be doing a lot of wincing.

The tradition stemming from Anselm to Aquinas and the Reformers to some contemporary Catholics, Reformed, and evangelicals stands apart for centralizing the cross as the primary site of exchange between what is due to human beings because of sin and what God gives them by grace because of Christ's work for us. Yet there is reason to critically revisit this tradition in the aftermath of its critics, such as Delores Williams, who, as I show in the next section, have charged it with overly penal and juridical conceptions of salvation and justice in Western forms of thought and practice.[14] Though there are contemporary defenders of Anselm

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[13] The purpose of capitalizing Sin, Death, and Evil is not to ontologize them but to speak of them in the way the Apostle Paul does, that is, as powers and principalities.

[14] It can be argued that the object of critique is better reserved for late scholastic, nineteenth-century Reformed theology, especially as seen in the work of the Princeton theologian Charles Hodge, who

and Calvin, my aim is not to defend the particular formulations given in this tradition as much as it is to affirm their commitment to remaining with the scandal that is the cross and asking what it means that Christ's suffering and death is "for us and for our salvation," as stated in the Creed.[15] More recently, Barth argued that the problems with the juridical emphasis stem not from taking the cross and its role in atonement seriously but from developing an abstract upper half of a theory of justice together with which the crucifixion of Christ constitutes the lower half. The problem, in other words, is a natural theology that takes one of the primary metaphors given in Scripture for the Christ event and seeks to understand it by correlating it with an independent theory of justice or sacrifice.

In spite of the problems with this atonement tradition, Rutledge is right to argue, echoing Barth, that its virtue lies in its insight that the cross reveals the weight of sin.[16] Apart from the cross, we cannot know the weight of sin. Though sin's effects might be open to empirical observation, its weight and character are disclosed only in Christ's life and death. And if we cannot know the weight of sin, then neither can we know what it is that God in Christ liberates

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articulated a forensic penal satisfaction theory of atonement that lost much of the earlier complexity and reduced atonement to a matter of forgiving individuals their sin through the Father's being satisfied by pouring out his wrath upon the Son. Such models pit the wrath of God against God's mercy, thus making a division within God between Father and Son and suggesting a need for a change within God rather than between sin-bound creatures and God. This atonement theology deserves all the critiques I survey in the next section.

[15] Contemporary defenses of Anselm, for instance, tend to show that he explicitly drew on a restorative justice framework in opposition to a penal justice one; he also provided a necessary corrective against what he saw as a singular overemphasis on the ransom or battlefield metaphors in patristic theology, which placed all the action a thousand miles over human heads and failed to provide an adequate account of the personal dimensions of sin and salvation. Contemporary defenses of Calvin tend to emphasize that Calvin's goal in stressing the singularity of Christ's sacrifice once for all was to abolish sacrifice from everyday Christian life and worship. In other words, it was intended to completely remove ritual sacrifice from a Christian society, whether in the form of a non-bloody Mass or in the form of ritual violence in society. Regarding the latter, however, one might still argue that he unwittingly helped to sublimate ritual sacrifice into a narrow, penal understanding of public justice as seen in the death penalty and mass incarceration.

[16] Rutledge, *The Crucifixion*, 167-204.

and restores us from. The cross reveals the full weight of sin in its moment of being overcome: The scandalous remedy reveals the catastrophic predicament. Without knowing the shameful, torturous, and unjust way in which God dealt with sin, we have no access to knowing its depths, its complexity and contradiction, its ungodly weight. We cannot know the fullness of the Yes God speaks to creation because we fail to understand the No God's Yes enwraps. More particularly, we cannot fully know and respond to extractivism's political ecology without knowing it as judged and opened to conversion in Christ.

Without the cross, many of us become Pelagians in one way or another. Maybe we become good liberals who think that education or technology or policy or some business model holds the power to get us out of our ecological mess. We come to valorize sacrifice in a positive sense only insofar as we mean by it something like a vague moral orientation toward others or, more likely, an enlightened and expanded conception of self-interest, that is, only insofar as we convert sacrifice into a consequentialist calculation, a self-giving only in appearance. This is the project of the constructive liberal theory of environmental sacrifice that I addressed at the end of chapter two. The crucifixion of Christ reveals its impotence. The crucifixion reveals even its danger to keep us stuck in a diabolical cycle of using the same sciences and technologies that got us into the mess as if they were sufficient to get us out of it. It reveals as misbegotten liberalism's conception of freedom as freedom from nature for self-development. The cross reveals this constructive theory of a liberal environmental politics of sacrifice as a temptation to pride, the sin that is marked by the failure to be an interdependent creature and aspire instead to be a Creator. Pride is the temptation to overcome our creatureliness, even our fallen creatureliness, by creaturely means. It confuses the creature's capacities and powers with the Creator's. It cannot bear the scandal of the cross in all its drama. It needs no conversion by grace. It can find its own way out.

Beyond this liberal theory, the cross also reveals two other constructive theories of sacrifice and society as dead ends. They are worth examining because they comprise the strongest critiques of the liberal theory. The first is a transgressive inversion of the liberal theory. I call it a neo-pagan, anti-utilitarian theory of sacrifice. Its roots lie in Friedrich Nietzsche, Martin Heidegger, and Georges Bataille. Alan Stoekl has explicitly applied it to environmental thought, though it is also reflected in eco-pessimists and anarcho-naturalists like Derrick Jensen. It adopts some version of Nietzsche's Romantic fetishization of will and animality. In this view, the Western rationalist tradition is re-interpreted as a long story of decline into some form of slavish captivity, most recently in Christian-ish liberal bourgeois society and its celebration of utilitarian mediocrity. In Heidegger's influential interpretation, moderns have become slaves of the very technologies they thought would liberate them but which have instead turned themselves and their world into a mere standing reserve of natural resources and raw materials churning pointlessly toward nothing.[17] Influenced by this declension narrative, Bataille wedded it to a Durkheimian sociology of religion when he theorized sacrifice as a transgression against the secular, utilitarian world of things and tools (think: Weber's Protestants) through making contact with the sacred world of continuity, immanence, and animality (think: Nietzsche). Sacrifice, an act of delivering things from thing-ness to continuity, appears violent only because of the radical contrast between sacred immanence and the secular world of property, boundaries, and identity. Sacrifice is a transgressive crossing of boundaries in rejection of liberal strictures and in pursuit of aesthetic expression. For neo-pagans, the liberal critique of austere environmentalism is inadequate. Self-denial, asceticism, and humility should not be softened or enlightened; they should be resolutely rejected and opposed. Sacrifice restores us to ego, animality, or a natural law

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[17] Martin Heidegger, "The Question Concerning Technology," in *Martin Heidegger: Basic Writings*, ed. David Farrell Krell (New York: Harper & Row, 1977), 283-318.

of loss through carnivalesque consumption, expenditure without return, and profligate wastage, mimicking the sun's excessive rays that shoot out into space toward nowhere and nothing in particular.

Though this neo-pagan theory of sacrifice has its own critique of utilitarian extractivism, it nevertheless reinscribes and naturalizes sacrifice by other means. It unleashes human desire and the forms of extraction and consumption it fuels.[18] In Stoekl's neo-pagan environmental vision, conservation is a byproduct of consumption, a kind of non-calculated precondition for consumptive expenditure; environmentalism becomes a non-consequentialist consequentialism of preserving the conditions for continued sacrifice and expenditure.[19] But while Bataille's inversion of liberalism's stingy ontology into an ontology of immanent abundance may have its own important insights, this approach is nevertheless deeply mistaken. It posits a demonic force at the heart of things that entraps and suffocates individuality and self-expression. Michael Gillespie argues that its theology of history is Manichean in nature, determined by a losing struggle against the forces that would annihilate the self as a cog in a great, pointless machine.[20] Not even God could come out of the struggle alive. The cross symbolizes the death of God, if it symbolizes anything at all.

The cross of Christ, however, reveals this neo-pagan theory of sacrifice as a failure to be human, a failure to be one of those for whom Christ suffered and died in order that they might be reconciled to God in covenant fellowship. It also reveals the deeply anti-humanist element that

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[18] This is the logic behind Jean-Joseph Goux's argument that Bataille's critique of Weberian, liberal capitalism actually provides neoliberal consumer capitalism with a sacred aura, in "Georges Bataille and the Religion of Capitalism," in *Negative Ecstasies: Georges Bataille and the Study of Religion*, eds. Jeremy Biles and Kent Brintnall (New York: Fordham University Press, 2015), 106-22.

[19] Allan Stoekl, *Bataille's Peak: Energy, Religion, and Postsustainability* (Minneapolis: University of Minnesota Press, 2007).

[20] Michael Allen Gillespie, *The Theological Origins of Modernity* (Chicago: University of Chicago Press, 2008), 284-85.

lies behind some biocentric and anti-civilizational forms of radical political ecology, which posit humanity, rather than sin, as the problem to be overcome. It is instructive to note the temptations this Manichean manner of thinking makes available. Heidegger, for instance, was seduced by the anti-humanist Nazi vision to overcome liberal weakness, and Bataille, captivated by Aztec ritual, explored plans with a secretive group to perform a human sacrifice. Nietzsche could only say yes to life by saying no to the cross and the humbling grace of God it displayed. His counter-deity violently sacrificed the weak to express his own ego; his god thrived on sacrifice zones.[21] He could not see, as Barth did, that the No of the cross is itself wrapped before and behind by God's great, life-affirming Yes.

Though it may seem counterintuitive, the problem I am naming here can be understood as the sin of sloth. Sloth is the vice of failing to live up to the exalted status of the human as it is revealed in the election of grace and in the depths to which God in Christ would go to love and save it from annihilation. Instead of seeking to become human in the way humanity is revealed as loved, judged, and called in Christ's work, neo-pagans fetishize immanentist materialities, animalities, and ontologies of becoming that make a virtue out of the failure to be human. Though perhaps popularly associated with inactivity and idleness, sloth may also involve a very active and intense rejection of the call to be human. There should be little surprise that the deeply anti-human transhumanist movement today falls into many of the same traps in its desire to extend

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[21] "Through Christianity, the individual was made so important, so absolute that he could no longer be sacrificed: but the species endures only through human sacrifice. … Genuine charity demands sacrifice for the good of the species—it is hard, it is full of self-overcoming, because it needs human sacrifice. And this pseudo-humaneness called Christianity wants it established that no one should be sacrificed." Friedrich Nietzsche, *The Will to Power*, trans. Walter Kaufmann and R.J. Hollingdale (New York: Vintage Books, 1968), §246, 142. René Girard, a close reader of Nietzsche, characterized Nietzsche's counter-deity in these terms: "A culture has to pay a price in order to breed a class of higher men. It has to assume even the worst forms of violence. Time and time again, Nietzsche tells us that Dionysus accommodates all human passions, including the lust to annihilate, the most ferocious appetite for destruction. Dionysus says yes to the sacrifice of many human lives, including, not so paradoxically, those of the highest type that is being bred in the process." René Girard, *The Girard Reader*, ed. James G. Williams (New York: Crossroad, 1996), 245-46.

physical, biological, or intellectual life for the small class of human beings that is able to access the technologies capable of transforming this elect group into a different species altogether. A metaphor borrowed from Tim Ingold can be used to name this theory's limitations: The world is a meshwork of lines in knots and there is little protest that can be mustered when lines get in a tangle and some get snuffed out, for those lines continue on, like compost, in the continuation of others.[22] The cross, however, is God's protest against divinizing any demonic force as if it were the economy of salvation. The cross is God's answer to the devastation of human sloth—divinized by neo-pagans as human greatness—and the sacrifices it demands.

The third theory of sacrifice and society that is revealed by the cross as false is what I call the progressive humanist suspension of the ethical, and it has both Pelagian and Manichean elements.[23] This is perhaps most characteristic of the Marxist tradition that holds that there is one last, great act of sacrificial purgation that stands between the world as it is and the world as it will and should be, that is, a revolution that would remove the constraints on human productive powers, usher in abundance, and eliminate want. In the name of a future of freedom and abundance, all manner of unethical action is rendered permissible, even salutary. A steadfast faith in the righteousness of the *telos* unhinges the means from ethical constraint. A faith in the future of some administrative or social-ecological utopia permits present sacrifices that, though ordinarily understood to be unethical, can thereby be seen as ethical vis-a-vis their capacity to bring about that future.

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[22] See Tim Ingold, *Being Alive: Essays on Movement, Knowledge and Description* (New York: Routledge, 2011), 63-94.

[23] I borrow this concept of the suspension of the ethical from Luke Bretherton, who treats it as a form of "apocalyptic absolutism" in *Being Alive* (forthcoming). See also Luke Bretherton, "Political Theology, Radical Democracy, and Virtue Ethics; or Alasdair MacIntyre and the Paradoxes of a Revolutionary Consciousness," *Political Theology* (2021): 1-23.

Søren Kierkegaard explored this suspension of the ethical in his meditation on the Genesis drama on Mt. Moriah.[24] Though liberal moderns might tend to correlate faith and reason in everyday life, he explored how the divine command to sacrifice one's own child reveals the utterly contradictory trajectories of the two and therefore the need to root ethical discernment in either one or the other. Though in the Genesis account the God of Abraham is ultimately shown to be trustworthy, the gods of progress in whom many moderns place their faith have not yet proven their trustworthiness; they are rather like demons whose commands would justify filling the earth with sacrifice zones in the name of a righteous end still yet to come. As Joseph de Maistre said of moderns, we have made gloomy peace with the fact that our "tables are covered with corpses." The French revolutionaries fighting in the name of liberty, equality, and fraternity could justify purgative violence against not only the allies of the *ancien régime* but also even the likes of Robespierre, one of the very figureheads of the Revolution itself. And once violence itself becomes the means of purging a blockage between present injustice and future utopia, it can take on a life of its own, as in the gulags, gas chambers, and killing fields. In Marx's adaptation of Feuerbach, even God must be killed in order for the destitute to access their alienated powers to bring about a future of freedom on earth. This future substitutes for a deity and becomes the idol—a Moloch—to which sacrifices are presented.

This progressive theory of sacrifice shares some elements with both liberals and neo-pagans, but its primary locus is a theology of history that posits a vision of a utopian future as the basis of present moral discernment. It shares the Pelagian pride of the liberals. However, in contrast to the latter, it is more self-conscious of the costs of freedom and therefore the need to purge elements or even persons that stand on the wrong side of history. As with liberals,

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[24] Søren Kierkegaard, *Fear and Trembling*, eds. C. Stephen Evans and Sylvia Walsh, trans. Sylvia Walsh (Cambridge: Cambridge University Press, 2006).

technology is not inherently problematic, nor is the mastery it affords over nature. However, in contrast to liberals, the problem is thought to be that the powers technology bestows are in the hands of an oppressive, clerical class. It is the special task of an elect community of the oppressed and their representatives who then have a special dispensation to suspend ethical restraints and use revolutionary violence in order to purge society and right its wrongs. Some theological frameworks give credence to such thinking. In a Christological formulation, for example, emphasis might be placed on Christ's Jewishness: He is the Messiah of an oppressed people under foreign occupation. That Jesus is Jewish is taken to mean that Christ liberates the oppressed in such a way that those who are bound by social structures and traditions are unbound by God. Critical theory is used in this theology to identify this oppressed class, its enemies, and the structures preventing freedom in any particular historical context. Christ's liberative work is for those in a subordinate status in society. In this way, it shares Manichean elements with the neo-pagans when it sets the dividing line between the righteous and unrighteous as a line between this group and that group.

But the scandal of the cross, as the Apostle Paul figures it, is that "Christ died for the ungodly."[25] Christ died even for the perpetrators, for the bitterest of God's enemies, for even the unjust, inhuman victimizers.

Rutledge's distinction between "religion" and "gospel" undergirds this point. Drawing particularly on the Pauline corpus, "Religion," she argues, "does not define all human beings on the same level of need before God. … In religion, as in every other human enterprise, there is always some underlying distinction," even among the most "inclusive" of churches. They, too, will exclude, replacing class- or race- or sex-based exclusions with others that are seen to be more righteous. But "the crucifixion of Jesus Christ puts an end to all these religious categories that

[25] Romans 5:6.

separate people from one another. There is no one who is not guilty of perpetrating something on someone at some point." For Paul, it is essential that "there is no distinction," not even between the righteous and the unrighteous.[26] The ultimate dividing line, in other words, is not between one individual or group and another; it runs instead through every heart. "We must account for victims and perpetrators alike. If we cannot do this, then it is not the *evangel*."[27]

Rutledge helps me articulate that while social and critical theory may be an essential aid to Christian witness in time, which is how I treat them in this dissertation, they nevertheless can become an aid to false sacrifice. Critical theory can reinvent the dividing wall between the godly and the ungodly and thus sanctify suspensions of the ethical that sacralize unethical acts—ignoring, cutting off, killing, marginalizing, excluding, or dehumanizing—in the name of social and environmental justice. Stated otherwise, critical theorists can become the object of the prophets' critique of sacrifice, a critique that is echoed by St. Paul: They perform an act of sacrifice, but only by suspending the element of love that would render the act just.[28]

Given my debt to social and critical theory, especially as I have sought to understand environmental injustice, sacrifice zones, and extractivism, it is important to be clear on this point. Of the liberal, neo-pagan, and progressive theories of sacrifice and society surveyed above, the latter is the one with which I share the most sympathy. I am not suggesting, then, that critical theory is a problem *tout court*. In fact, I see it as an essential aid to witness, but it is indeed an aid to and not, therefore, the substance of Christian proclamation and action. Critique is not gospel. The difficulty arises when critical theory displaces the problem most fully revealed by Christ's cross with something else, such as an abstract Western, anthropocentric worldview or a counter-substance to divine being, called "whiteness." When the problem is displaced, so also is the

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[26] Romans 3:22-23.
[27] Rutledge, *The Crucifixion*, 576-77.
[28] 1 Corinthians 13:1-3.

soteriology and its corresponding conception of human vocation. We might advocate replacing a Western, European, extractivist worldview with an indigenous one built around notions of harmony and balance. Or we might posit salvation as an active participation in Blackness. But these risk becoming natural theologies that abandon the scandal, foolishness, and offense of the gospel that God in Christ rectifies the ungodly, all of us, the children of Cain, who are bound together in our political ecologies of death. One of the characteristic damages of critical theory is the seductive power it bestows upon those who wield it to replace the cross's apocalyptic power to rescue those bound by Death and Sin—all of us—with its own dividing line between "us" and "them," a dividing line that has the power to open up a teleological suspension of the ethical in the name of historical progress.[29]

If the cross renders these approaches to ecopolitical sacrifice fundamentally flawed, the question of whether the cross itself should inform a theology and ethics of sacrifice is a matter of intense theological debate. Though I ultimately argue that the cross—more generally, the priestly work of Christ—should orient Christian ecopolitical witness, I set the terms for my project through engagement with theological critiques of sacrifice from the standpoint of victims.

II. The Critique of Sacrifice from the Standpoint of Victims

Understanding Delores Williams's critique of sacrifice is essential to my argument that Restoring Eden helps to give shape to a constructive ecopolitics of *sacrafice*. Within Williams's critique there lies what I take to be one of the most serious indictments of traditional atonement theologies and Christian valorizations of sacrifice that might derive from them. Williams unites a feminist

[29] This language of "characteristic damage" is borrowed from Lauren Winner, *The Dangers of Christian Practice: On Wayward Gifts, Characteristic Damage, and Sin* (New Haven: Yale University Press, 2018).

critique of androcentric soteriologies, an ecofeminist critique of humanity-nature dualism and anthropocentrism, an African American experience of slavery and its aftermath, an African American woman's experience of surrogacy, and a critique of Black women's embrace of even voluntary self-sacrifice as a virtous expression of love within Black churches and communities. I engage Williams, then, as a scholar who unifies and represents a host of critiques of sacrifice. As such, she sets high the bar over which any constructive theology of sacrifice needs to pass. The multiple concerns she represents thus require that a hermeneutic between true and false sacrifice proclaim no cheap, phraseological victory over what is an existential reality for those who are most at risk of being falsely sacrificed or being told their salvation lies in their self-extinction.

Concerns about sacrifice, extraction, and wilderness form the core of Delores Williams's influential critique of surrogacy theologies. Surrogacy theology is for Williams an umbrella concept that gathers together different, even competing traditions that, in one way or another, make sacrifice either an acceptable, even if lamentable, aspect of social life or a central pathway to salvation and Christian existence.[30] Whether theological concepts have justified coercive forms of surrogacy or positively valorized voluntary surrogacy, in her account both are forms of surrogacy theology.

Using Gustaf Aulen's threefold typology of atonement theories, Williams accuses all the major theories of promoting a surrogacy theology, which, by glorifying the cross and suffering, renders Black women's exploitation sacred.[31] In Williams's estimation, substitutionary atonement

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[30] Williams argues that, according to most Protestant theology, "Jesus represents the ultimate surrogate figure; he stands in the place of someone else: sinful humankind. Surrogacy, attached to this divine personage, thus takes on an aura of the sacred. It is therefore fitting and proper for black women to ask whether the image of a surrogate-God has salvific power for Black women or whether this image supports and reinforces the exploitation that has accompanied their experience with surrogacy." Delores Williams, *Sisters in the Wilderness: The Challenge of Womanist God-Talk* (Maryknol, NY: Orbis Books, 2013), 143.

[31] Ibid., 147.

theologies stemming from Anselm and John Calvin are the most egregious example, for they most explicitly figure Jesus as the sacred surrogate for our salvation: Jesus is either the substitute whose death satisfies God's justice, as in Anselm, or the substitute who absorbs God's punishing wrath against sin, as in Calvin. Even Abelardian views, which are often gathered together as a moral influence theory of atonement because of the fact that they view God's expression of love as salvific or redemptive, uphold surrogacy: By making the cross exemplary of God's love, and therefore worthy of imitation by Christians, they valorize self-sacrifice as the *sine qua non* of Christian love and living. In practice, this means that Black women's salvation stands in continuity with their surrogate roles in society, family, and church life. According to Williams, even Aulen's preferred third type valorizes surrogacy. Williams charges the triumphant victory theme of *Christus victor*, which she sees also in Black liberation theology, with its own valorization of heroic self-sacrifice. Williams argues that, in view of how soteriological theories change through time, a different, contextually appropriate model is now needed in order to valorize life, especially Black women's life. She envisions a soteriology refocused around the life and teaching of Jesus, especially as he resisted and overcame temptation in the wilderness. She suggests that it is Jesus' life, not his death, and his ministerial vision of righting relationships, not his substitutionary role on our behalf, that are salvific.[32] This is the meaning that lies behind Williams's most definitive statement on the issue: "There is nothing divine in the blood of the cross."[33] For Williams, any ecopolitics of sacrifice can be nothing but a politics of surrogacy and death, a politics of funding the life of some by the death of others.

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[32] Ibid., 145-46.

[33] Ibid., 148. The fuller context of her conclusion: "Humankind is … redeemed through Jesus' *ministerial* vision of life and not through his death. There is nothing divine in the blood of the cross. God does not intend black women's surrogacy experience. Neither can Christian faith affirm such an idea. Jesus did not come to be a surrogate. Jesus came for life, to show humans a perfect vision of ministerial relation that humans had very little knowledge of. As Christians, black women cannot forget the cross, but neither

I focus on Williams's critique here not because I think she provides the most precise or sustained theological critique of sacrifice or the most compelling vision for reconstructing the doctrine of soteriology. Rather, it is because Williams intensifies and unites serious critiques from many quarters, including from Black, feminist, ecofeminist, womanist, and Girardian theologies, all of which submit doctrine to ethical critique from the standpoint of the victims of injustice. By uniting these, she shows that at stake in these debates are the existential matters of life and death.[34] By engaging Williams on this matter, I intend therefore to establish my project as an alternative to cheap, phraseological solutions to troubling, existential realities. Williams sets the terms in which a constructive theology of sacrifice ought to be articulated. Any solution to the sacrifice problem must be more than phraseological and theoretical; it must also be a hermeneutic to aid and guide Christian action—that is, an element of life-affirming practical reason. If the church is to proclaim that Christ gave himself as a sacrifice, the attempt must be made to proclaim it in a way that can be heard as good news today, especially by those inhabiting extractivism's sacrifice zones.

Williams presents a more troubling critique of sacrifice than the one against which the scholars of environmental politics examined in the second chapter developed their constructive, liberal theory of environmental sacrifice. Whereas they responded to the critiques of sacrifice stemming from a place of comfort and privilege, Williams's challenge demands that a constructive theory of environmental sacrifice give even more sustained attention to the critique stemming from the standpoint of the victim.

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can they glorify it. To do so is to glorify suffering and to render their exploitation sacred. To do so is to glorify the sin of defilement" (emphasis original).

[34] In Williams's terms, at stake are matters of sheer survival and quality of life.

What unites the various critiques of sacrifice represented by Williams is that they are all practical, ethical critiques of doctrine. In other words, they appeal to the ethical in critique of the doctrinal. As I survey them here, I also note other figures in these traditions who nevertheless hold out a positive role for sacrifice, or who maintain that the cross ought to remain normative for Christian thought and practice.

A. Black Theology and the Practice of the Cross

Williams affirms the way that Black theology addresses matters of suffering and salvation as primarily practical, not theoretical, problems. In this tradition, thinking on these matters ought to end not merely in conclusions but in action. According to James Cone, for instance, theodicy and atonement are addressed in Black Christian tradition as existential matters. The challenge is not to explain evil and suffering nor even to provide a theory of atonement. Rather, the challenge is to overcome suffering and injustice, for this is what Christ did: He became a slave in order to liberate the enslaved.[35] Yet, while Williams concludes that there is no redemptive value in the cross, or in suffering more generally, it is important to note that her conclusion is not necessitated by Black theology's practical orientation. Cone, for instance, agrees with other womanist theologians, such as Shawn Copeland and JoAnne Terrell, who argue that the cross has empowered Black women in the struggle for liberation, and thus ought to remain central to Christian proclamation. The cross, for him, remains a scandal to elites and those with power, especially those who align religion with prevailing power dynamics, for it symbolizes God's solidarity with the crucified of history and their triumph over being defined by their social

[35] Cone, *The Cross and the Lynching Tree*, 160.

condition.[36] More practically and contextually, he argues that "the blood of the cross of Jesus" has a binding power capable of overcoming America's brutal history: It binds Black and white Americans as sisters and brothers, showing that there is no unbridgeable gulf between them, for God is able to transform all the ugliness, brutality, and evil of the crosses and lynching trees into "the triumphant beauty of the divine."[37]

This intramural debate within Black and womanist theology might also be understood as different ways of engaging Nietzsche's critique of sacrifice.[38] Nietzsche rejected Christianity's self-sacrificial virtues, which he associated with renunciation and the idea of taking up one's cross daily. This slave morality produced servility, mediocrity, and nay-saying, thus inhibiting greatness and full-throated affirmations of life. Williams upholds Nietzsche's strong opposition between self-sacrifice and affirmations of life. Cone, in contrast, complicates Nietzsche's view of Christ and the cross. Nietzsche may be justified in his critique of bourgeois aesthetics and rationalities that promote servility, complacency, and mediocrity. He may also be right in promoting self-affirmation and a positive role for power. Yet Cone argues that Christ's cross is an indispensable part of God's solidarity with and liberation of the oppressed from their social relegation to servility. "Nietzsche was right," Cone concludes, though not in the way Nietzsche meant it. "*Christianity is a religion of slaves*. God became a slave in Jesus and thereby liberated slaves from being determined by their social condition."[39] For Cone, in short, it is essential that Christ be understood as fulfilling a substitutionary role to free slaves from a (false, servile) slave morality and a social system that determines their life.

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[36] Ibid., 156, 160.

[37] Ibid., 166.

[38] In one version of the critique, Nietzsche writes, "The Christian faith is from the beginning sacrifice: sacrifice of all freedom, all pride, all self-confidence of the spirit; at the same time enslavement and self-mockery, self-mutilation." Friedrich Nietzsche, *Beyond Good and Evil: Prelude to a Philosophy of the Future*, trans. Walter Kaufmann (New York: Vintage Books, 1966), §46, 60.

[39] Cone, *The Cross and the Lynching Tree*, 160 (emphasis original).

B. Feminist Theology and Christian Love

Williams also echoes the feminist critique of sacrifice that constitutes a cornerstone of feminist theological reflection. Feminist theology from the time of Valerie Saiving's early articulation of it to the contemporary work of Rita Nakashima Brock and Rebecca Parker has sustained a critique of sacrificial theologies of atonement and the Christian life as injurious for women.[40] Barbara Hilkert-Andolsen furthermore criticized its role in Christian ethics, particularly through Reinhold Niebuhr's and Anders Nygren's identification of love with self-sacrifical *agape*. In this tradition, a primary focus on the sin of pride and therefore self-sacrificial humility as the pathway of salvation leaves many women's experiences outside the frame of salvation and sanctified living. Worse, by valorizing redemptive suffering, such theologies might even function to encourage women to remain in abusive, unjust relationships as if this constituted their pathway of salvation. Williams's critique affirms this critical tradition, especially its more radical form, as seen in Brock and Parker, which seeks not to revise or reconstruct atonement theology but to provide an alternative to it. Her proposed soteriology based on the life of Jesus is an alternative to crucicentric faith and ethics. This radical critique contrasts with those feminists who reconstruct a positive crucicentrism around redemptive, life-giving suffering, as in childbirth and child rearing,

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[40] Rebecca Parker, for instance, draws on her own experience to examine the injurious dimensions of normative sacrifice and the questions that ought to be put to it: "I recognized that Christianity had taught me that sacrifice is the way of life. I forgot the neighbor who raped me, but I could see that when theology presents Jesus' death as God's sacrifice of his beloved child for the sake of the world, it teaches that the highest love is sacrifice. To make sacrifice or to be sacrificed is virtuous and redemptive. But what if this is not true? What if nothing, or very little, is saved? What if the consequence of sacrifice is simply pain, the diminishment of life, fragmentation of the soul, abasement, shame? What if the severing of life is merely destructive of life and is not the path of love, courage, trust, and faith? What if the performance of sacrifice is a ritual in which some human beings bear loss and others are protected from accountability or moral expectations?" In Rita Nakashima Brock and Rebecca Ann Parker, *Proverbs of Ashes: Violence, Redemptive Suffering, and the Search for What Saves Us* (Boston: Beacon Press, 2001), 25.

or a theology of the cross as a call to solidarity with the victims of oppression.[41] In contrast to self-denying *agapic* ethics, these constructive proposals interpret the cross as expressing a mutualistic conception of love.

C. Ecofeminism and the Ontological Status of Matter

Williams explicitly develops ecofeminist theorizing about a solidarity between the earth, or Nature, and women's bodies. According to ecofeminists, non-human nature and women have been seen and treated as generative of life—as in the concept of "Mother Earth"—but also, especially in modernity, as a resource for androcentric projects. The provocative image ecofeminists paint is of the earth as a passive woman who is brought to perfection via violation and domination. "She" is used to meet the active protagonist's—Man's—desires and appetites. Francis Bacon is a frequent object of critique because he philosophized science as an instrument of human domination over nature.[42] Williams uses ecofeminist theory to explore theological connections between the nineteenth-century practice of using the enslaved as "breeder women," extracting new slave labor from their wombs, with the twentieth-century practice of strip-mining the earth for coal.[43] I explored in the previous chapter how Williams theorizes these as analogous forms of extraction tied together by a common logic of extracting spirit from matter, which constitutes what she calls the sin of defilement. Ecofeminists, in short, see a dualistic logic at work in modern conceptions of nature: It reproduces dichotomies between body and spirit, matter

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[41] Some examples of this are Mary J. Streufert, "Material Sacrifice as a Hermeneutics of the Cross," 63-75, and Deanna A. Thompson, "Becoming a Feminist Theologian of the Cross," 76-90, "Mary M. Solberg, "All That Matters: What an Epistemology of the Cross is Good For," 139-153, in *Cross Examinations: Readings on the Meaning of the Cross Today*, ed. Marit Trelstad (Minneapolis: Augsburg Fortress, 2006).

[42] See, for instance, Carolyn Merchant, *The Death of Nature: Women, Ecology and the Scientific Revolution* (New York: HarperCollins, 1980).

[43] Delores Williams, "Sin, Nature, and Black Women's Bodies," in *Ecofeminism and the Sacred*, ed. Carol J. Adams (New York: Continuum, 1993), 24-29.

and mind, women and men, and these hierarchical dichotomies function to distinguish between sacrificeable and preservable matter. The ecofeminist's and ecowomanist's constructive vision is often developed as some form of holism or monism. Although Williams eschews ascribing any meaning to the cross because of the material life crucicentric theologies have lived in androcentric, anthropocentric, and racist societies, the ecofeminist theologian Cynthia Moe-Lobeda shows that ecofeminism can also recover the cross as a potent symbol of Christian solidarity with the victims of environmental injustice.[44]

D. Womanist Theology and the Material Life of Crucicentrism

Williams is a leading scholar of womanist theology, a theological tradition founded on the doctrine that Black women in the U.S. exist in a state of triple jeopardy within a matrix of complex and interacting cross-pressures between race, class, and gender.[45] Womanist theologians have focused in particular on how the message of salvation empowers or fails to empower agency and joy within the overlapping structures that constrain Black women's lives and wellbeing. In tension with the liberation theme in Black theology, which celebrates heroic sacrifice and encourages Black women to self-sacrifice for the cause, Williams prioritizes a theological focus on survival and quality of life given the many crosses Black women involuntarily and even voluntarily carry. How do you keep walking in a social world that is ready to sacrifice you at every turn? In Williams's estimation, the redemptive journey for Black women involves putting down their socially assigned crosses, not taking up new ones. Williams contends that even a triumphant cross of liberation is inadequate to overcome Black women's surrogacy roles within

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[44] Cynthia Moe-Lobeda, "A Theology of the Cross for the 'Uncreators'," in *Cross Examinations: Readings on the Meaning of the Cross Today*, ed. Marit Trelstad (Minneapolis: Augsburg Fortress, 2006), 181-195.

[45] Jacqueline Grant, *White Women's Christ and Black Women's Jesus: Feminist Christology and Womanist Response* (Atlanta: Scholars Press, 1989), 202.

white society and Black familial and ecclesial structures. The biblical figure she thinks represents Black women's experience is neither Moses the liberator nor Isaiah's Suffering Servant; it is Hagar, the enslaved surrogate in whose life God intervenes to make a way out of no way.[46] God is primarily a waymaker, not a liberator or vicarious representative. In liberationist and atonement theologies, Williams concludes, sacrifice lives a material life in the bodies of Black women and the surrogacy roles they are assigned. The only way beyond this is through rejecting sacrificial and crucicentric soteriologies.

However, whereas Williams concludes that soteriology requires evacuating the cross of any theological meaning and de-centering it from Christian life, fellow womanist theologians, such as JoAnne Terrell, Shawn Copeland, and Karen Baker-Fletcher, maintain the cross is a potent symbol to empower Black women's agency to move forward amidst the perennial roadblocks they encounter in the wilderness. Since I see Williams's womanist critique of sacrifice as the most significant one to address in my constructive project, I will elaborate this intra-womanist theological debate further. Terrell's response to Williams ultimately supports my argument in this chapter that Golgotha is at once a false sacrifice zone and a site of true sacrifice: It is a place where multiple and contrasting soil-cities are constituted by different patterns of blood, soil, and belonging. To Williams's "there is nothing divine in the blood of the cross," Terrell responds that "there is *something* of God in the blood of the cross."[47] What Terrell means is that while she agrees with Williams that "there is nothing of God's *sanction*" in the violence of the cross, there are nevertheless multiple meanings of sacrifice intersecting in the cross. While sacrifices may be coerced and violent, the theological concept of sacrifice must not be reductively identified with violence. The cross is a socially assigned and violent form of surrogacy, but it is

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[46] Williams, *Sisters in the Wilderness*, 15-31.

[47] JoAnne Marie Terrell, *Power in the Blood?: The Cross in the African American Experience* (Eugene, OR: Wipf & Stock, 1998), 124 (emphasis original).

also more than that. Its power exceeds the social, historical forces that enacted it, because God transformed it into a site of God's empowering presence among the scapegoated and falsely sacrificed.

Terrell's is a complex account of sacrifice and the cross. She argues that while different conceptions of sacrifice emerged in early Christianity and were often braided together, there is nevertheless a need to distinguish between them if the cross is to continue to empower Black women's moral agency in racist, sexist, and inequitable economic contexts. In her account, the New Testament bore witness to the singularity of Jesus' willing sacrifice that put an end to the continuation of sacred violence. In subsequent Christian history, sacrifice came to acquire two different but related meanings, which she calls a "hermeneutic of sacrifice" and "sacramental witness." Faced with persecution and martyrdom, the early Christians redefined Jesus' death through a "hermeneutic of sacrifice," which was their way to make meaning of their own persecution and death; it was how they embraced their willingness to die a martyr's death as itself a form of meaningful agency, that is, a "sacramental witness," a participation in Christ's cross. In this sense, persecuted Christians fused together two meanings of sacrifice: They developed a hermeneutic of sacrifice that recognized their active agency in an event that might otherwise seem to be a mere passive pacifism in face of imperial persecution. In time, imitating Christ through personal sacrifice eventually came to be "the *sine qua non* of Christian character."[48] However, this wedding together of martyrological sacrifice and sacramental witness changed after Constantine. Under Constantinian conditions, the hermeneutic of sacrifice became aligned with governing interests when it was imposed; rather than an instance of moral agency, passive forms of pacifism were regulated, and this reproduced victimization—in Williams's terms, surrogacy. As such the hermeneutic of sacrifice was separated from sacramental witness. As an imposition it

[48] Ibid., 20-22, 142.

no longer participated in the cross. In the process of becoming a universalized, decontextualized ethic, personal sacrifice lost its sacramental character of active agency under death-dealing conditions. Terrell argues that this passive hermeneutic of sacrifice was later imposed on African slaves. The miracle, however, is that many slaves discovered and improvised contextual ways to transform this negative hermeneutics of sacrifice—surrogacy—into an active sacramental witness that made Christ present to those around them.[49]

Terrell intends for her historical account of these two conceptions of sacrifice to reveal something about the meaning of Christ's cross both then and now. The cross cannot be reduced to a mere human action or to a social logic of surrogacy. She thinks it was that; yet it was also a true sacrifice, a once-for-all sacrifice in which God acted to "at-one" humanity with Godself. The cross expressed and expresses God's "*with-us-ness*."[50] In other words, for Terrell, this authentic sacrifice was defined by the perfect resonance between divine freedom and human agency in the cross of Jesus Christ.[51] Authentic sacrifices on our part have their being by a participation in this one act of at-one-ment and God-with-us-ness. The false sacrifices of surrogacy, in contrast, are imposed or coerced sacrifices that prolong sacred violence and leave violent structures intact. In sum, rather than reject sacrifice and atonement theologies entirely, Terrell parses out the ambivalence of sacrifice by distinguishing imposed sacrifices, which maintain unjust and violent orders, from willing sacrifices, which by opening spaces of moral agency within unjust contexts make Jesus Christ present in history in sacramental witness. Briefly stated, false sacrifices are passive, coerced, or imposed sacrifices intended to pacify unjust orders; participating in Christ's true sacrifice, by contrast, enables agency. True sacrifices are active, sacramental, and free. They

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[49] Ibid., 30.

[50] Ibid., 125. "With-us-ness" is Emmanuel, God with us.

[51] The language of "true sacrifice" is not Terrell's, but is my rendering of her distinction between passive and active meanings of sacrifice.

cannot be systematized and universalized. They remain a matter of prudential judgment about what love looks like in any particular context.

Terrell's account accords with Williams's in affirming that Jesus' death is not necessarily the most theologically significant aspect of his witness. She contends that his death, as with any death, is significant in light of the life that preceded it.[52] That which is revealed and enacted in Christ's death on the cross must be understood in concert with his life: The life reveals the death, and the death reveals the life. This Christocentric approach to the cross, rather than a narrowly crucicentric one, undergirds my emphasis below on the priestly frame, which uses images and metaphors from Israel's cultic life to interpret Christ's entire life, death, resurrection, and ascension. In other words, it draws not only on the language of sacrifice but also that of priesthood and temple. According to Terrell, the significance of the life-death hermeneutic for Black women is enormous. To evacuate Black women's sacrifices of meaning, as she thinks Williams does, is to fail to understand "how they exercised or did not exercise their moral and creative agency."[53] In short, if there is power in Jesus' blood, then there is also hope that women's blood can participate in that power when divine and human agency meet in loving commitment—even, when freely chosen, in personal self-sacrifice.

Karen Baker-Fletcher furthers Terrell's position when she argues that telling the life-giving truth in a violent world always risks sacrifice. "Jesus' gift," she says, "is the power of life in an unfair, often brutal world." In his life, death, and resurrection, "Jesus the Christ shares the power of life, which blood represents, with the world." Jesus overcomes evil and death in his unique sacrifice. False sacrifice, which perpetuates a scapegoating practice of pacifying unjust societies, bears false witness to the fact that Jesus has overcome evil and sacred violence with

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[52] Ibid, 127.
[53] Ibid., 143.

true life. True sacrifices, by contrast, open up moral agency and invite us to "live into freedom from abuse, suffering, and bondage."[54] Baker-Fletcher echoes Terrell in recovering a positive conception of sacrifice as participation in Jesus' one true sacrifice that empowers moral agency in the midst of even the falsest of sacrifices.

Terrell and Baker-Fletcher demonstrate how to take Williams's critique seriously while also moving beyond it. Both agree with Williams that some atonement theologies have had death-dealing material lives in societies' surrogates. Terrell agrees that some atonement theologies shore up and impose a passive ethics of sacrifice on subjugated peoples. However, the life that Williams foregrounds in her revised soteriology is actually at the heart of Terrell's hard-won recovery of the moral, theological, and even pastoral meaning of Christian sacrifice. Something like Terrell's account of the material life of true sacrifice, then, might illuminate an ecopolitics of *sacrafice* for the inhabitants of sacrifice zones: The proper response to life-suffocating defilement is free, life-affirming witness.

E. Critical Theory's Turn to Victims

Terrell's caution against over-identifying sacrifice *per se* with violence brings us to one final critique represented by Williams: the critique of sacrifice as victimization. Williams echoes the critique of violence that characterizes much critical theory. It is one that builds on an inherent association between sacrifice, violence, and victimization. Each of the different critiques explored above can be seen as versions of this one. Theological critiques of sacrifice resonate and often engage directly with broader developments in critical theory and postmodern thought that foreground the perspectives and narratives of history's victims, often also uncovering the costs of

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[54] Karen Baker-Fletcher, *Dancing with God: The Trinity from a Womanist Perspective* (St. Louis: Chalice Press, 2006), 136-37.

modern subjectivity and subject formation. This turn to victims and subalterns, to the subjected and vanquished, draws attention to the human, ethical, and ecological costs of modern notions of political order, individual freedom, masculinity, and progress. It also has wide-reaching theological implications. For instance, does Christ's cross sanction violence, justify the victimization of others, or affirm a logic and practice of redemptive violence? One concern for theologians working within the terms of this turn is to reject any account of the cross as an instance of "divine child abuse" or anything resembling René Girard's scapegoat mechanism, where unjust social orders are preserved by temporarily satisfying socially mediated and mimetic forms of desire through scapegoating.[55] Though diverse, these theological projects coalesce around a constructive vision of separating redemptive violence from Christ's work in his life and death. Even here, however, and unlike Williams, some maintain an exemplary role for the cross as an instantiation of the way sacrificial, imperial, and unjust social structures render authentic Christian existence and solidarity with victims risky. In other words, they recover the cross as a powerful rejection of sacred violence and scapegoating.[56]

This turn to victims in theology and critical theory is stranger than it first appears; its critique of sacrifice rests on a close association between sacrifice, violence, and victimization that developed from Reformation-era debates. In my case, accepting an essential link between sacrifice, violence, and victimization would make my proposed political ecology of *sacrafice* dead on arrival, for all sacrificial practices would be seen as inherently violent and in need of

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[55] See J. Denny Weaver, *The Nonviolent Atonement* (Grand Rapids, MI: W.B. Eerdmans, 2011); or Mark S. Heim, *Saved From Sacrifice: A Theology of the Cross* (Grand Rapids, MI: W.B. Eerdmans, 2006). Heim, in particular, is evidence of the degree to which René Girard's work on scapegoating has been incorporated into theological reflection. Weaver reiterates Rita Nakashima Brock's critique of atonement as "cosmic child abuse" in Rita Nakashima Brock, *Journeys by Heart: A Christology of Erotic Power* (New York: Crossroad, 1988), 56.

[56] This is the direction Girard himself goes with his theory in *Things Hidden Since the Foundation of the World*, trans. Stephen Bann and Michael Metteer (Stanford, CA: Stanford University Press, 1987).

overcoming, not reinterpreting and redeploying. Since I hold that violence is not ultimately essential to a Christological account of sacrifice, a closer examination and deconstruction of this association serves to move toward my constructive vision.

Echoing Terrell's account above, Golgotha, the place of Jesus Christ's crucifixion, is a site of multiple meanings and performances of sacrifice.[57] If this is true, then an analogy can be drawn between Golgotha and extractivism's sacrifice zones: They should be understood as sites of rival sacrifices. But understanding the crucifixion as simultaneously true and false is obscured by the tradition stemming from Anselm and the Reformers that narrowed our interpretation of the cross to a drama between the Father and the Son, the representative human. Though I affirmed aspects of this tradition above—particularly the way in which it stays with the scandal of the cross, sees in the cross the true weight of sin, and teaches that Christ is the representative of and substitute for sin-sick humanity—it nevertheless loses sight of the theological importance of those who put Jesus on the cross. It focuses all the theological attention on what the Father accomplishes or satisfies by the Son's death. The diabolical figure, who features prominently in early Christian formulations, and the human actors in the drama foregrounded by critical theologians fall out of view. Some of this tradition's proponents have at times even suggested that the Father kills the Son for our salvation.

And yet, the New Testament suggests that Jesus was a surrogate, a scapegoat, a false sacrifice. The high priest Caiaphas admitted as much when he "advised the Jews that it would be

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[57] Girard seems to make a similar argument in an interview late in his life: "It is not quite true that I take what you have called a 'non-sacrificial reading of the death of Christ.' We must establish first of all that there are two kinds of sacrifice." He finds an example in 1 Kings 3 that can illuminate Christ's cross. In the Kings account, "The one who was willing to sacrifice herself for the child's life is in fact the mother. The first woman is willing to sacrifice a child to the needs of rivalry. Sacrifice is the solution to mimetic rivalry and the foundation of it. The second woman is willing to sacrifice everything she wants for the sake of the child's life. This is sacrifice in the sense of the gospel. It is in this sense that Christ is a sacrifice since he gave himself 'for the life of the world.'" René Girard, "Violence and the Lamb Slain: An Interview with René Girard by Brian McDonald," *Touchstone: A Journal of Mere Christianity* (December 2003), accessed November 17, 2020, [h…w].touchstonemag.com/archives/article.php?id=16-10-040-i.

expedient that one man should die for the people."[58] That Jesus was a scapegoat in this Girardian sense must be understood to have theological meaning. The crucifixion was a false sacrifice in the sense that it was perpetrated by those who used false testimony and a sham trial to accuse and condemn to death Truth itself, the person of Jesus Christ. The religious, social, and political authorities sought to dis-member Jesus from the life of the community in order to sustain an unjust, unstable, and highly compromising religio-political order within Roman imperial structures. The religious leaders scapegoated Jesus in order to control their own future within the Roman Empire: They put an end to this disruptive life that threatened to bring down the ire of Rome on the Jewish people.[59] To deflect the wrath of Rome and sustain their compromised existence within imperial strictures—effectively recognizing Rome rather than Yahweh as the guarantor of their life, land, and identity—they scapegoated Jesus Christ. But given Jesus' popularity among the people who sought to crown him king, the only way they could scapegoat the Truth was to enact a sham trial under the political authority of Rome. And that required false witnesses. Pontius Pilate let the legal and political authority he represented be distorted and used to carry out such a false trial and sacrifice. The priestly, juridical, and royal frames that I briefly addressed in this chapter's introduction intersect here at the site of their inversion: false sacrifice, false witness, and false judgment go hand in hand in the event of Christ's crucifixion. Jesus is the victim of this counterfeit regime that binds together a surprisingly diverse grouping of Jews and Gentiles, authorities, commoners, and even Jesus' followers into commonality through scapegoating the Truth. As such, Jesus stands in solidarity with the victims of counterfeit regimes of religion, law, and politics throughout history.

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[58] John 18:14.

[59] According to John 11:47, after Jesus raised Lazarus, "the chief priests and the Pharisees gathered the Council and said, 'What are we to do? For this man performs many signs. If we let him go on like this, everyone will believe in him, and the Romans will come and take away both our place and our nation.'"

However, depicting Jesus as a victim is curious. The meaning we are to derive from it is unclear. It should not unequivocally signal our modern association of victimhood with violence and the annihilation of life. Johannes Zachhuber observes that one of the ironies of modern critiques of violence, sacrifice, and victimization is that the association between these is itself born out of Reformation and post-Reformation debates about the salvific meaning of Christ's cross.[60] Prior to the Reformation, the Latin word *victima* simply referred to a sacrificial offering, particularly Christ's self-offering; it did not connote human violence, and certainly not coercive violence. Rather, it connoted a transformation of everyday matter into sacred matter (*sacra-facere* meaning "to make sacred"), especially as the bread and wine were transformed into the body and blood of Christ. True, such sacred matter could be destroyed in sacrifice, but this was inessential to the concept of *victima*. For this reason, Augustine could write in the fifth century that Christians themselves were a *victima* being offered and transformed by the communication of the divine life through the sacrament.[61]

The meaning of *victima* changed with the Reformers. In their effort to overthrow the religio-political system that by late medieval Christendom was held together by the ritual re-sacrifice of the Mass and the ecclesiastical hierarchy associated with it, the Reformers argued that Christ's sacrifice was once-for-all. Christ's sacrifice on the cross rendered ritual sacrifice obsolete because his sacrifice was "perfect." What made it so was the fact that it was the sacrificial death of an innocent, sinless human being.[62] The irony is that though the Reformers intended for this

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[60] I owe this reading of Western history to Johannes Zachhuber and Julia Meszaros, "Introduction," and Johannes Zachhuber, "Modern Discourse on Sacrifice and its Theological Background," in *Sacrifice and Modern Thought*, eds. Julia Meszaros and Johannes Zachhuber (Oxford: Oxford University Press, 2013), 1-28.

[61] Augustine, *City of God*, X.6-7.

[62] Interestingly enough, Roman Catholics also came to associate sacrifice with the immolation of a victim: the material of the host is completely destroyed as it is transubstantiated into the body and blood of Christ, thus making it a genuine continuation of the Christ event.

doctrine to eliminate ritual sacrifice from Christian life, and thus undermine the corrupt ecclesio-political hierarchy that preyed upon it, the doctrine resulted in a seemingly unbreakable link between sacrifice (religion), victimization, and coercive violence.[63] In time, victimization came to mean sacrifice (religion) and coercive violence. And this is a crucial factor in understanding why so much modern thought to the present day has developed in critique of religion as inherently violent and therefore something to be disciplined or overcome through other, more immanent capacities, such as reason, science, and a nation-state that could be founded on humanism and/or the laws of nature.[64] The Reformers unwittingly associated Christ's sacrifice with violence and victimization in ways that would later be used to reject Christianity—or at least the presence of religion in public spaces—as something dangerous, prone to coercive violence, and in need of discipline by other authorities.

At the very least, contemporary critiques of victimization and the unjust social orders that sustain themselves through scapegoating and surrogacy are Christological in origin, born out of Reformation and post-Reformation debates about Christ as a sacrificial victim and the significance of his sacrifice for contemporary life. Echoing Barth, we might say that a Reformation doctrine that sought to overthrow the word of man by the Word of God was subsequently twisted into an instrument to overthrow the Word of God by a new word of enlightened, modern Man.[65] Proclaiming Christ as a once-for-all sacrifice was meant to free the sacrament and salvation itself from Babylonian captivity, to borrow Luther's dramatic language,

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[63] I write "sacrifice (religion)" because in modern theories of religion, sacrifice and sacrificial rituals are often examined as representative of religion, as a whole, or as its paradigmatic form.

[64] For an examination of how the modern, liberal state is mythologized as a kind of salvation from religious violence, see William Cavanaugh, *The Myth of Religious Violence: Secular Ideology and the Roots of Modern Conflict* (New York: Oxford University Press, 2009) and his earlier version of this argument in William Cavanaugh, "'A Fire Strong Enough to Consume the House:' The Wars of Religion and the Rise of the State," *Modern Theology* 11, no. 4 (October 1995): 397-420.

[65] This is Barth's argument about the Reformers' teaching about the priesthood of all believers, what he calls the doctrine of "the emancipation of the laity," in *Church Dogmatics* IV/3.1, ed. G.W. Bromiley and T.F. Torrance, trans. G.W. Bromiley (Peabody, MA: Hendrickson Publishers, 1961), 33-35.

but it ended up fueling a penal understanding of atonement that Christianity's critics could point to as evidence of the faith's crude and inherently violent nature. Christians were left to try to understand Christ's cross within the limits set by a modern, ethical critique of sacrifice as inherently violent and unmodern. The upshot of this strange development, however, has been a renewed understanding of the role that social and historical forces played in Christ's death. Jesus was indeed killed by the religious, legal, and political authorities outside the gate of Jerusalem. He was "scapegoated" in the Girardian sense. He was a "surrogate" in Williams's sense—one who, by bearing the dirt and sins and injustice of the people, bore the cost of maintaining a death-dealing, life-suffocating order. In my terms, he was falsely sacrificed.

This must be immediately followed by a "but." But God used this falsest of sacrifices to reveal the suffocating density of sin in its very moment of being cleared away. But God transformed this counterfeit regime of false sacrifice, false testimony, and false judgment into its own undoing and annihilation. But God went willingly in place of the death-bound, suffocating creature outside the gate in order to reclaim that particular sacrifice zone as the place of creatures' re-membering to the Triune Life. But God refused our death-dealing refusal of Life, defied and undefiled our defiling defiance. But, in short, God was the active subject during the entire Passion narrative. And in that Passion, God reveals Godself as the God who loves in freedom, the God who is for us, the God who, in being for us, calls us to bear witness to this life-giving sacrifice by going out and being for the world, even and especially in its sacrifice zones. This is the essence of our priestly vocation as human beings: We bear witness to the fact that God humbly dealt with the ultimate consequences of our defilement so that we do not have to. We do not need to dis-member others in order to save ourselves from death and grasp after membership in abundant life. Life is no longer something we need to secure for ourselves by dis-membering other creatures from communion in it, as if the pathway to prolonging our own futurity and abundance required

making peace with and sustaining socially and environmentally unjust orders built upon false sacrifices. Life is a gift of the God who is revealed as being for the life of the world in the moment of bearing in Jesus' own blood the arsenic, cadmium, lead, and manganese in our air and soil so as to decontaminate our blood for a new life, a life communicated by the Triune Life.

As I develop it further in the next section, this is the theological basis of a political ecology of *sacrafice* that can incorporate the multiple critiques of sacrifice that Delores Williams fuses together in her influential work.

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In sum, Williams submits Christian doctrine, particularly received doctrinal formulations of the atonement, to ethical critique. In her account, crucicentric theologies and ethics have not been good news for Black women who have borne in their bodies the material life of substitutionary logics and self-renunciatory virtues for far too long. In her estimation, the ethical way to reconstruct soteriology is to shift attention from Christ's death to his life and teaching. I have demonstrated that Williams's ethical critique of surrogacy theology has much deeper and broader roots than might first appear. And while I do not share Williams's sense that bad theology is the root of Black women's oppression—preferring instead to read theology and political economy as complexly and mutually interrelated—her ethical critique of sacrifice still stands. She unites and intensifies a much broader constellation of rejections of sacrifice in modern thought based on a moral and theological commitment to victims.

However, rejecting sacrificial practices and logics on ethical grounds is a different matter altogether from eradicating false sacrifices from contemporary societies. In other words, critiques of sacrifice in general should not be confused with overcoming sacrificial patterns and practices that scapegoat and victimize. Counterintuitively, they might function to sublimate or naturalize false sacrifices into the structures of modern life. For instance, whether in the form of the

Protestant critique of the Mass, the Socinians' rational critique of substitutionary atonement, or the Enlightenment's ethical critique of ritual and self-sacrifice, while much modern thought developed in critique of moral and ritual sacrifice, I argued in the last chapter that it has nevertheless constructed its notions of subjectivity and progress on the sacrifice of lives and lands through extractivism. What if the antidote to false sacrifice is not no sacrifice but true sacrifice? Is it possible that rejections of sacrifice *tout court* might actually blind us to the ways in which ordinary and extraordinary sacrifices, whether for good or ill or of the moral or ritual variety, form the deep structure of modern societies?

For Williams, all affirmations of the cross as a substitute or example are forms of surrogacy theology. I dispute Williams's conclusion. However, the essential element in Williams's critique of sacrifice, as I see it, is that there is a need to address surrogacy and sacrifice at not only the phraseological and theoretical level but also at the level of practice and action. This means it must be a matter of practical reasoning: A theological understanding of Christ's sacrifice ought to be part of our reasoning about the meaning of extractivism's sacrifice zones and our deliberations over what to do in a world littered with them. The issue is existential at root—a matter of life (and quality of life) and death—and any theoretical distinctions that might be made ought to be judged to some degree by their material life among the sacrificed, crucified, lynched, defiled, and poisoned today. Sacrifice must be the terrain of dispute because it is the existential terrain of life and death. In addition to the arguments by Terrell and Baker-Fletcher surveyed above, Williams herself actually points one way forward beyond her own critique when she describes sin in terms of defilement and salvation as a reconfiguring of relationships. As one philosopher put it, "The Christian language of sacrifice only makes sense

within a context of the Fall and salvation."[66] In Scripture and tradition, Williams's way of understanding sin as defilement and salvation as righting relationships comes within the priestly frame that interprets Christ's person and work through a set of images related to priesthood, sacrifice, and temple. In contemporary thought, the concepts of defilement and relationship are also central to ecological language. In the priestly frame, we see that God in Christ moves toward a sacrifice zone in order to overcome death-dealing false sacrifices with one true sacrifice for the life of the world. We see a God whose character it is to transform false sacrifice zones into sacred zones, polluted places into habitats of grace, and defiled matter into communicative matter that participates in the divine Life—in short, Williams's surrogacy zones into Terrell's sacramental witness zones.

III. A Priestly Theology of Truth-Telling

Thus far, I have argued that the cross reveals as false a number of constructive political ecologies of sacrifice, and I set the terms for a positive account of sacrifice through engagement with Delores Williams and her critique of sacrifice from the standpoint of victims. I also noted support from within the victims' standpoint for an alternative conception of sacrifice—and against its wholesale rejection—based on a fuller interpretation of Christ's cross in relation to his life and resurrection.

Lest it appear that I have strayed from the fieldwork, the trajectory of this in-depth analysis of ecopolitical sacrifices in social theory and political theology has been set by the field-derived concept of citizen science as restorative truth-telling, which includes making publicly visible in numbers, charts, and graphs the invisibilized costs of fossil fuel extraction and use.

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[66] Douglas Hedley, *Sacrifice Imagined: Violence, Atonement, and the Sacred* (New York: Continuum, 2011), 7.

Recall that Restoring Eden originated in Peter's commitment to oppose the false sacrifice of wilderness habitats through practices of reweaving affective ties to creation, that is, through being re-membered to the community of creation while seeking to also re-member those creatures that have been dis-membered through extractive industry. From the beginning, Restoring Eden sought to convert these affective relations into truth-telling practices that could expand this re-membering work out into the wider fields of culture and politics. Similarly, though Sarah's trajectory was initially focused on the human creatures that are dis-membered from society through environmental injustice, she too responded to extractivism's false sacrifices with practices of neighboring the dis-membered and telling the truth about their condition through door-to-door health surveys. As an organization, Restoring Eden innovated ways to respond to false sacrifices with truth-telling practices, and this is what provided the theological framework in which the citizen science health studies would eventually come into being.

In this section, I explain why I think these citizen science projects bear witness to the kind of citizenship creatures have by grace in God's political ecology as it is revealed in and constituted by the life, death, and resurrection of Jesus Christ. I am not suggesting there is anything salvific about these citizen science projects: They do not save anybody, at least not in the theological sense. There is also nothing revelatory about them: They do not reveal the divine work in history.[67] My argument is that these projects give testimony to reality as it is revealed in the economy of creation and salvation. In this sense, I argue that the Restoring Eden projects bear witness to the revealed truth that falsely sacrificed creatures (and those who sacrifice them) are those whom God is for; they are those for whom Jesus Christ transformed the false sacrifice of a Roman cross into the one true sacrifice that makes a place and provides air, soil, and water for the

[67] The first caveat is a typically Protestant one that only God saves through grace. The second is a typically Barthian one that human speech and action are most free when they bear witness to God's gracious, prior action for us and on our behalf in Jesus Christ.

new life of the creature. I can describe it this way: If the false sacrifices that constitute an extractivist political ecology pollute and defile the whole ecosystem, then Christ in his life and death takes on all the defilement and pollution unleashed by these false sacrifices in history in order to clean up and restore the ecosystem for newly alive creatures to inhabit a life-giving ecology of grace. This is soteriology understood in terms of Christ's priestly work: As Priest, Temple, and Sacrifice, Jesus Christ removes the sin polluting creation since Cain sought to control the outcome of his sacrifice and, after it failed, killed his brother, bloodied the soil, built a city, and bequeathed to generations the industrial arts of struggle against the earth. By Christ's true sacrifice, those who were once children of Cain, belonging to the political ecology of Sin and Death and Evil, are adopted as children of God and made citizens of the soil-city of God. And the soil that was bloodied—the soil against which Cain's offspring developed the arts of struggle—is made to communicate to all creatures the life of its Creator. The priestly task of Christians, the Christian community, and all humanity is to bear witness by the power of the Holy Spirit in speech and action to this reality: We are members of the divine political ecology in which all creatures are called to bear witness to God as the origin, sustainer, and end of creaturely life.

A. The Priestly Frame of Jesus Christ's Person and Work

The priestly frame, by which I mean the way of understanding Christology and anthropology in terms of Christ's priestly office, can be summarized through engaging primarily the work of Karl Barth, Colin Gunton, and Fleming Rutledge. These three constructed a positive theology of sacrifice on the conviction that God's self-revelation in Christ radically transformed, rather than fulfilled, natural accounts of sacrifice in religion and politics. For them, Christ fulfilled his priestly office by judging and transforming the practices, offices, and institutions characterizing human priesthoods.

Traditional reflection on Christ's priestly office is reflection on Jesus Christ as the Messiah of Israel and the Lord of the church. Christ was anointed for ministry as a prophet, priest, and king, three roles to which ministers in Old Testament Israel were anointed, though never united in one and the same person. While particular offices might be appropriated to particular moments in Jesus Christ's life and ministry, they are never divided, for the history of Jesus Christ reveals who God is always and everywhere. One could argue that efforts to simplify this plurality of offices in the one person and history of Jesus Christ—making one office determinative, for example, or narrowing the priestly office to the crucifixion—are responsible for the confusions and distortions that deserve to be rejected.[68] Though I am not advocating a singular focus on the priestly frame, there are two reasons for focusing on Christ's priestly office in this dissertation: first, being offensive to modern ears, it has been unduly sidelined and rejected, leaving our understanding of Jesus Christ's person and work impoverished; and second, I think it is essential for an ecopolitical theology capable of informing responses to extractivism's sacrifice zones, which I have described, following the fieldwork and environmental justice literature, in priestly terms. Another way to simplify Christological plurality is by narrowing Christ's offices to one or more particular moments in Christ's ministry. While the priestly office is sometimes erroneously narrowed down to the crucifixion, the latter should instead be thought of as the climax of Christ's

[68] Though the most influential figures in patristic and Western theology never fully reduced atonement to one of Christ's offices or to one moment in the Christ event, many did prioritize one over the others: The patristics prioritized Christ's royal work of liberating creatures from bondage to Death and Evil, and Anselm and the Reformers prioritized the priestly work of addressing sins, particularly in the crucifixion. My approach is informed by the way both Aquinas and Barth examined and integrated multiple images drawn from Christ's three-fold offices to display the irreducible fullness of the doctrine of atonement.

priestly work, not its singularly defining moment. Rather, Christ inhabits and fulfills this office in his life, death, resurrection, and ascension.[69]

Colin Gunton provided a succinct account of Christ's priestly work in his study of metaphors for atonement. Gunton argued that while they have often been reduced to an individualistic and moralistic framework, the images from Israel's cultic life that Christians used to interpret Jesus Christ are better understood as cosmic in scope. Central to Israel's cult were various sacrificial rites. In a cosmos disordered by sin, the practice of sacrifice "has to do with the rightful ordering of life in the world."[70] If fallenness is something disseminated throughout the creation like a life-suffocating pollution, Christ's life-giving sacrifice reaches out along these same pathways. All life has its being in the life given by the Word made flesh. Gunton summarized the priestly metaphor this way:

> The development begins with the recognition of sin and evil as dirt or pollution. Human life, soiled in a soiled universe, is deprived of its proper direction by sin and its consequences. Such recognition is often accompanied by the belief that the giving of life, the greatest gift of the creator, demolishes the barrier that uncleanness erects, and so restores relationship. Here we reach the heart of the mystery of the atonement, for the life that is given is the life of God himself, the incarnate Son dying for the life of the world.[71]

As Gunton observes, the priestly frame gets to the heart of ecopolitical theology because it takes us into the heart of God and therefore the heart of creaturely existence. It is about communicating the divine Life to God's creatures suffocating within and bound together by political ecologies of death.

Viewed through the priestly frame, God the Son acts to remedy the disorder and pollution of the cosmos by becoming the true Priest, Sacrifice, and Temple.

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[69] Beyond the crucifixion, God's humbling to become a human creature in Jesus Christ, Jesus Christ's love for others in his earthly ministry, and his eternal being as Mediator at the right hand of the Father are all part of Christ's priestly work.

[70] Colin E. Gunton, *The Actuality of Atonement: A Study of Metaphor, Rationality and the Christian Tradition* (Edinburgh: T&T Clark, 1988), 136.

[71] Ibid., 138.

As the true Priest, Christ liberates humanity from natural theologies of priestly mediation. In the language of Hebrews, he is a priest not in the order of Aaron, which is the order of historical priesthoods, but in the order of Melchizedek, meaning that Christ is an eternal priest without parallel. The nature of Christ's priesthood cannot be derived from a theory or law drawn from an empirical study of human priests. According to Barth, he is the Priest who in successfully representing us frees us from our own desire to set ourselves up as mediators between God and the people, for this desire tends to twist authentic priesthood into its opposite. Pointing to the golden calf episode, Barth argues that Aaronic, human priests are prone to confuse the *vox populi*—the voice of the people or nation—with the *vox Dei*, the word of God.[72] Such priests become the opposite of the true Priest; they become the priests of a national church, a people bound together by something other than the Word of God. They might become, for instance, priests of a people bound by extractivism's false sacrifices. If Barth is right that Jesus Christ is definitive of genuine priesthood, then actual priests are to be judged as true or false by the degree to which they signify Christ's priesthood, not vice versa. Jesus takes the place of the human that sets itself up as priest and mediator. Gunton adds that in Jesus, who is both the once-for-all human offerer of a gift and the divine gift that is given, the normal sense of priestly action is reversed: God is the primary giver who acts to bring God's people into relationship with Godself.[73] God acts as mediator—partly by judging false mediators—to clear away the pollution that chokes creatures off from the goodness of created life with God.

As the true Sacrifice, Christ does away with the regime of false sacrifice through giving God's own life for the life of the world—that is, for creatures' new creation. Jesus Christ is the perfect substitute and mediator who responds to disorder by restoring cosmic order. As Gunton

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[72] Barth, *Church Dogmatics* IV/1, 429.
[73] Gunton, *Atonement*, 124-26.

observes, sacrifice is the other side of a concern for cosmic wholeness in the midst of the disorder and pollution that obstruct the communication of divine life to creatures. When "sin is construed in terms of uncleanness," as in the priestly frame, sacrifice functions as a "removal of the uncleanness which pollutes the good creation."[74] At their best, Old Testament Israel's practice of sacrificing a substitute animal signified Christ's one true sacrifice, temporarily bridging—without fundamentally altering—the discordant relation between the human and God brought about by sin. However, as Barth contends, Israel's practice of blood sacrifice too often became its opposite: a sinful flight from God to a sacred work, a *do ut des* exchange that pretends to acquire power over God and thus control the outcome of the ritual.[75] Rituals of this sort distort the substitutionary logic of sacrifice when the real relation between the substituted life offered and the life of the human offerer is broken. When this occurs, the act of substitution simply provides a cheap feeling of remission or anxiety alleviation that allows sin to continue unabated in the heart, in society, and in the cosmos. This, according to Barth, was the reason for the prophetic critique of sacrifice: The sacrificial practices Israel's prophets condemned lacked any real connection between the internal and external elements that would make the ritual a true sign; these loveless sacrifices lacked the internal elements of love for God and identification with the substitute as well as love's external element of just relations to human others and the land.[76] As the true mediator and substitute, however, Jesus Christ unites the internal and external elements; in Christ, the act and moral elements are at one. God defines love in the very act of making our need—our

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[74] Affirming Mary Douglas's conclusion that a concern for purity is a concern for wholeness and order, Gunton states, "Sacrifice is the other side of the matter, and has to do at least in part with the ordering and reordering of life both in the cosmos and in relation to God." Gunton, *Atonement*, 118-19.

[75] Barth, *Church Dogmatics*, IV/1, 277-81.The philosopher Moshe Halbertal explores the nature of the anxiety opened up between the space of the offering and the return, and thus the tendency to try to close down that space through ritual mechanisms, in Moshe Halbertal, *On Sacrifice* (Princeton: Princeton University Press, 2012).

[76] Karl Barth, *Church Dogmatics* IV/2, eds. G.W. Bromiley and T.F. Torrance, trans. G.W. Bromiley (Peabody, MA: Hendrickson Publishers, 1958), 564.

human need to address that which blocks us from God—God's own need. God acts in love to make the human God's faithful covenant partner who is at peace and reconciled with and converted to this God through this display of love. This is what God does for us.

With Rutledge, we can understand the apocalyptic dimension of this "for us" as Paul addressed it in his letter to the Romans. Though scholars debate whether the word *hilasterion* in 3:25 should be translated as "expiation" or "propitiation," Rutledge holds that Paul's purpose was to portray God not as removing an obstacle within Godself (as is the case in appeasement theologies of atonement) but as removing an obstacle from the side of humanity, between us and God. Rutledge's Trinitarian theological point is that God is never divided between subject (Father) and object (Son), for God is always Acting Subject. Of greater significance, she also argues that Paul's purpose in Romans 3:25 is to contrast the old system of "passing over sins" with the new reality that God in Christ has done away with the regime of Sin, understood as a menacing and polluting power.[77] God in Christ removed for us the obstacle—the thing distorting the cosmic order and polluting creation—from our side. As Barth writes, "God wills and demands the man himself, to make an end of him, so that the new man may have air and space for a new life."[78] God does this for us. When the crucifixion becomes a drama between God and God, both human historical forces and diabolical figures drop out of view, confirming all of the fears manifested by the critics of sacrifice from the standpoint of victims. When understood as God's response to a death-dealing political ecology of sacrifice, however, the crucifixion reveals a power to both loosen those things bound together by false sacrifice and re-member them to the communicative ecology of created and redeemed life.

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[77] Rutledge, *The Crucifixion*, 279-82.
[78] Barth, *Church Dogmatics* IV/1, 280.

As the true Temple, Christ's flesh is the Spirit's prototype of re-membered matter that, having been restored from its dis-memberment by sin, communicates anew the divine Life to creatures. In the priestly frame, Christ's person is interpreted as the material place of God's dwelling, that is, as matter kept holy by the Spirit. In this vein, Gunton observes that the priestly frame is particularly able to image the relation between Christology and pneumatology, between creation, incarnation, and sanctification. The Spirit, who redeems created-but-defiled matter so that it communicates life, keeps Christ's body—a body consisting of the same flesh as the rest of the good-but-polluted ecosystem—from sin. For this reason, Gunton writes that the Spirit makes Christ's flesh "the first instance of restored humanity" and his human life "the prototype of the Spirit's work" of re-membering matter that had been, in Jude's terms, devoid of Spirit.[79] Using temple language for Christ's person and work, therefore, draws attention to God's action to take polluted matter and make it holy. And this work of sanctifying defiled matter radiates out from Christ's body by the Spirit, whose work, according to the Apostle Paul, is to extend God's temple out from Christ's body to the Christian community and ultimately to the whole world, claiming all things for renewal.[80] By restoring defiled flesh to its communication with the divine Life, the Spirit thus enables Christ to make a true sacrifice from within the world of polluted matter and thus to open it up to a new, life-giving communication.

B. The Identity and Vocation of Humanity as a Universal Priesthood

A priestly understanding of the human and humanity's vocation corresponds to this account of the person and work of Jesus Christ. In terms of the priestly frame, the human is called to its true

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[79] Gunton, *Atonement*, 132, 135; Jude 19.
[80] See, for instance, 1 Corinthians 3:16-17; 6:19.

identity by becoming a universal priesthood, a "living sacrifice," and a temple of the Spirit.[81] In short, the human is a member of the creation community who speaks and acts according to the truth that creatures caught up in political ecologies of sin and death have also been, and are being, re-membered to the life-giving political ecology of God.

First, all humanity is called to join the community of priests sent into the world as witnesses to God's Word and work—the one Mediator Jesus Christ—by offering all of creation to God in praise and thanksgiving. This conception of the human's priestly vocation integrates, on the one hand, the quintessentially Protestant doctrine of a priesthood of all believers, which affirms a universal ministerial vocation, and, on the other, the Eastern Orthodox teaching that the human is essentially a priest of creation.

Though these stand in some tension, I contend that these two views of the human as priest can be integrated by making a distinction between mediation and ministry. Whereas the doctrine of a universal priesthood eliminates obstacles within the church, such as a strong clergy-laity distinction, that might impede Christian witness in the world, the doctrine of the human as a priest of creation is closely associated with the sacramental life of the church and the strong clergy-laity distinction embodied in Eastern Orthodox and Roman Catholic traditions.[82] The tension can be productively held by making a distinction between mediation and ministry (that is, witness). Rather than mediating between the non-human creation and God, as many Eastern Orthodox view the human's role, being a priest of creation is better understood as a universal call

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[81] All three elements are enjoined, for instance, by the Apostle Peter in 1 Peter 2:9: "You are a chosen race, a royal priesthood, a holy nation, a people for his own possession, that you may proclaim the excellencies of him who called you out of darkness into his marvelous light." God thus constitutes the people of God by a calling to take up the task of exercising priestly power, offering themselves as a holy and collective sacrifice, and living as a temple that belongs to the Lord.

[82] Luther's development of the priesthood of all believers was a strong protest against what he saw as a corrupt church and sacramental life that hinged on a restricted, clerical view of priesthood. Orthodox teaching on the human as priest of creation draws attention to the eucharist as the human's paradigmatic act: bread and wine, fruits of the earth transformed by human culture, are offered to God in praise and thanksgiving and blessed by God.

to bear witness to Christ as the only mediator between God and creatures, human and otherkind. Likewise, the church is primarily associated not with its offices but with its vocation to bear witness to the God who moves toward the world's sacrifice zones and frees their inhabitants from being defined by political ecologies of death. As the community of those called to bear witness to God as the mediator of all creation and the covenant maker, the church develops historically contingent distinctions and institutional structures to aid in responding to that call. John Flett argues that this is how the church reflects the God whose being is in God's act of movement toward the world in the economy: The church is the community constituted by its calling into the world, meaning the realm that is also centered in Christ yet does not recognize it.[83] Neither the human nor the church is a priest in the sense of being a mediating agent between God and the world. Particular churches' internal and contingent distinctions, liturgical forms, and traditions are to be oriented toward actualizing their missional calling. The human's priestly vocation is not to mediate between God and the world by being the church but to be the church by bearing truthful witness to Christ as the one true Mediator. All are called to this priestly vocation in the world; the church is the name given to those who respond. With this distinction between understanding human priesthood as either mediation or ministry, I hold that the insights from multiple traditions are best integrated by conceiving the human's priestly vocation as a call to ministry and witness.[84] As Orlando Costas puts it in the epigraph to this chapter, priesthood refers to the Christian's being set apart for ministry; it is about removing obstacles to Christian witness; it is about the church becoming itself by moving toward the world in witness.

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[83] John G. Flett, *The Witness of God: The Trinity, Missio Dei, Karl Barth, and the Nature of Christian Community* (Grand Rapids: W.B. Eerdmans Press, 2010).

[84] As I argued in chapter one, there is a proper place for the language of mediation. There, I argued that there is a creaturely mediation of moral authority, which is to say that all creatures, both human and otherkind, can mediate God's call to human beings to take up their vocation. What I am rejecting in this chapter is the notion that humanity or any particular subset of humanity mediates salvation.

Within this ministerial framework, the Orthodox doctrine of Christ's mediation nevertheless corrects the loss among Protestants and Roman Catholics of a full understanding of the role the otherkind creatures play in God's economy of salvation. Dietrich Bonhoeffer's Christocentric theology of creation models a way to integrate them. Bonhoeffer shows how to incorporate the Orthodox teaching, formulated most influentially by Maximus the Confessor in his doctrine of the *logoi*, that there is a direct relation between God and creatures by which God draws otherkind into the economy of salvation. Since Christ is the mediating Priest at the center of all creation, then it must also be said that God relates directly to and works with otherkind creatures apart from any mediation by humanity. There is an excess to otherkind creatures stemming from their place in God's economy that cannot be restricted by their circumscription in human economies. Otherwise stated, the covenant was never exclusively an affair between God and humanity; from the beginning it included the otherkind creatures gathered together under the dynamic categories of land, soil, water, plants, and living creatures, or what I call "otherkind." Barth recognized this, but Bonhoeffer followed it through more thoroughly: If Christ is the Mediator at the center of all creation, then Christ, the new creation, is the "center of nature."[85] Bonhoeffer portrays the drama in terms of creation's speaking, circumscription, and liberation:

> As the new creation, Christ makes all other creatures into the old creation. Nature is subject to the curse of God upon Adam's field, whereas it was nature's original role to be and to proclaim God's Word. But as the fallen creation it is now dumb, in servitude, not free, a creature in subjection, … a creature awaiting a new freedom with eager longing. Thus nature is between servitude and liberation, between servitude and redemption. … The elements of the old creation become the elements of the new creation … to the extent

[85] Barth recognizes this when talking about creation as the outer element of the covenant and the covenant as the inner element of creation. However, he severely curtails this insight when naming the otherkind creation as the stage for a dramatic history between God and humanity. This stage metaphor suggests that while the otherkind creation is part of the divine economy, it nevertheless lacks an active role in the unfolding drama of salvation.

> that they are set free from their dumb condition, from their interpretation by humankind. These elements speak and say what they are.[86]

Bonhoeffer rightly concludes from his Christocentric account of creation that otherkind's role in the economy of creation and salvation is to give creaturely testimony.[87] Otherkind creatures are created to bear witness; they share in Adam's fall into bondage and thus become subjected to a merely human, restricted interpretation that curtails their witness; and, in Christ the Mediator, they are freed to testify anew beyond that restricted human economy of interpretation.

I address the theology of creation this implies more directly in the next chapter, particularly as it challenges a contemporary temptation to set up new, worldly, restricted priesthoods in the offices of Scientist and Manager. Such restricted priesthoods that mediate between politics and nature are new iterations of the old tendency to set up some particular class of mediators whose special capacities earn them the right to rule over others and guide their behavior. The point to underline here is that the priesthood of all believers is a universal call to bear witness to the Word and work of God that is at the center of all creation. As Bonhoeffer suggests, exercising human priesthood sometimes means getting out of the way, refusing to restrict otherkind creatures' witness, and letting them be defined primarily by God's economy, not our own. The human is not called to mediate God's salvation to the rest of creation but to let it bear its own witness and to join together with it, to guard its excess from being curtailed and circumscribed by human economies, and, by doing so, to offer creation to God in praise and thanksgiving. That is how to treat creatures as *victimae*.

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[86] Dietrich Bonhoeffer, "Lectures on Christology," in *The Bonhoeffer Reader*, eds. Clifford J. Green and Michael P. DeJonge (Minneapolis: Fortress Press, 2013), 284-85.

[87] In my view, Bonhoeffer's theology in general is most problematic whenever he turns to natural theologies of mediation. This is clearest in his earlier work that melds Christological community with German nationalism but is also present in his late work when he posits that Europe's identity and history serve a special role in God's economy.

C. The Identity and Vocation of the Human as a "Living Sacrifice"

In addition to being called to exercise a human priesthood, humanity is called to be what the Apostle Paul calls a "living sacrifice," that is, one whose whole person is converted to God. This is the second aspect of human vocation as understood within the priestly frame. Our ability to understand it is blocked by our modern associations between sacrifice, coercive violence, and scapegoating victimization. However, as in the pre-modern meaning of *victima*—that which is offered to God—we can say with Augustine that the entire city of God is a *victima*, a sacrifice, an offering to God.[88] In his influential exposition of sacrifice in Book X of the *City of God*, Augustine associates this offering not with violence but with love, particularly the love of God and neighbor.[89] To "sacrifice" oneself or one's neighbor, in his account, means to refer oneself or one's neighbor to God rather than solipsistically to oneself, thus rendering them a mere instrument. Sacrificing someone means pointing them toward the source and end of true and good life. In this sense, sacrificial love of oneself and one's neighbor involves referring them to the God who renders them sacred.

Augustine's account of sacrifice is akin to what Katongole means by the "sacrifice of Africa." For Katongole, this positive sacrifice refers to a community that tells and embodies a narrative that makes falsely sacrificed lives and lands sacred. It does so in active opposition to the extractivist narrative and liturgies of the modern nation-state that render lives and lands disposable in the name of development. To be a sacrifice, or to offer oneself as a sacrifice, is thus a way of saying that one's ultimate reference is the God who shows what love and holiness are by being for us in Jesus Christ. Making lives and lands into a sacrifice involves restoring their

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[88] Augustine, *City of God*, X.6.
[89] Ibid., X.3.

ultimate reference in relation to God's economy, not our restricted human economies. It means re-embedding our extractive industries within moral and creaturely limits.

These accounts of sacrifice as an element of Christian vocation flesh out the concept as it is employed in the New Testament. For instance, the author of Hebrews associates Christian sacrifices with good deeds and sharing possessions.[90] The Apostle Paul associates the notion of a "living sacrifice" with mutual service that edifies the collective body. Barth rightly observes that this notion of a "living sacrifice" is meant to signify the wholeness or totality of Christian conversion to God. In this sense, becoming a living sacrifice entails overcoming the sin of sloth by living into the human's exalted existence as God's covenant partner. It involves "disposition and action together," the inward element of love and the outward element of practice, respectively.[91] The prophetic critique of sacrifice in the Old Testament was a critique of slothful, partial conversion, of engaging in the practices of worship and ritual sacrifice but without the internal element of love or its external, social embodiment in social justice and care of the land. Lacking the element of love, the sacrificial ritual was twisted into its opposite, what Barth calls a "sacrifice to inhumanity."[92] In short, the inner element of worship and love gives content and character to the outer element in ecclesial, social, and ecological spheres, guarding against the temptation to flee from God to a sacred act, as in natural theologies and practices of sacrifice.[93]

To offer oneself as a total sacrifice is therefore not narrowly identified with the kind of self-sacrificial, *agapic* love that is critiqued by feminist theologians. While it does not rule out self-sacrificial service as an appropriate form of Christian conversion, worship, and love, being a living sacrifice means also living up to our human calling as members of God's covenant

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[90] See the epigraph from Hebrews 13:12-16.
[91] Barth, *Church Dogmatics*, IV/2, 564.
[92] Ibid., 437.
[93] Ibid., 640.

fellowship. It means overcoming sloth. It has to do with living into the totality of conversion as one exalted by God to rightly love God, oneself, others, and otherkind. In Paul's words, it is to "let love be genuine" and to "overcome evil with good."[94] Though the theology and ethics of sacrifice have often been explored as an antidote to the sin of pride, they must also be understood as a rejection of sloth, as a call to take up a God-given task in boldness and power.

D. The Identity and Vocation of the Human as a Temple of the Spirit

Finally, human vocation in the priestly frame figures the human as a temple of the Holy Spirit, a material place of God's dwelling.[95] The human body is matter caught up in rejecting its defilement so that it might be sanctified to participate in God's ongoing activity in the world. Again, Augustine: "For we are all collectively his temple and individually his temples, since he deigns to dwell both in the concord of all and in each individual."[96] The Spirit who formed and preserved Christ's flesh from defiled matter, thus making it a prototype of the new creation, is the same Spirit at work in coal's sacrifice zones making defiled matter holy.

But what does this look like? I suggest that we can understand Jesus' jarring work of clearing the temple of moneychangers as the outworking in the economy of salvation of what it means to keep God's temple holy. Though the body as temple is sometimes narrowly associated with sexual purity, Jesus shows that keeping the temple from defilement is a proactive and socially disruptive calling in the midst of a polluted social ecology. The moneychangers are presumably using the Jews' ritual practices as an opportunity for mere economic gain. A sacrificial practice that would have once entailed an intimate relationship with the animal that is

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[94] Romans 12:9, 21.
[95] See, for instance, 1 Corinthians 3:16-17; 6:19.
[96] Augustine, *City of God*, X.3.

offered to God as a substitute for and sign of the life of the offerer has become a mere exchange of money for cheapened animals whose blood magically atones for sin, as if it were the blood that satisfied God and not the offered life it signified. In short, a practice that should be defined by its relation to the divine economy is instead restricted to a merely human one. In clearing out the temple, Jesus clears away this sacrificial practice that has been twisted into its opposite—a false sacrifice that defiles the matter that God inhabits. By ridding the temple of the moneychangers, he cleanses it from false sacrifices. This is how Jesus reclaims the temple from its defilement. It reveals to us what it means to keep God's temple—Christ's body, the bodies of Christians, the body that is the church, the material creation—holy. As himself the Temple, Jesus' movement through space becomes particularly significant as it points to the spatial prioritization and movement of God's habitat-building work; as the Temple, he goes to the unholy, ritually unclean place outside the city gates to perform the true function of the temple, that is, to sanctify created-but-defiled matter.[97]

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[97] One aspect of my fieldwork signals the promise of this way of framing ecopolitical action as bearing witness to the body as God's temple. Seventh Day Adventists in the United States are not known for their "progressive" stances on social and environmental issues. In fact, they tend to be classed as "conservative," especially given their individualistic and spiritualistic eschatology. However, a Black Adventist university in Alabama became the core partner for student volunteers in the Birmingham health study. This surprised me. When I asked why they were so interested, they pointed repeatedly to their strong commitment to the health of the human body as a temple of the Holy Spirit. They said that this was one of the primary doctrines informing Adventist ethics. This theology of the body as a temple of the Spirit, they said, explained Adventists' commitment to healthy eating, natural remedies for illnesses, and their global network of hospitals and medical and nursing schools. (For instance, in response to unhealthy eating habits among Americans, Adventist John Harvey Kellogg was responsible for making a bowl of milk and cereal the basic American breakfast.) When Peter described the situation in North Birmingham to them in terms of contaminated flesh and lungs, the head of the theology department immediately convened leaders from across the campus to coordinate an institutional partnership. It so happened that the head of the theology department had led an environmental justice campaign in Harlem while he was pastoring an Adventist church there, and he thought this kind of work needed to become more central for Adventist ministry. My fieldwork gives testimony to the fact that while this calling to de-defile the body from pollution is not the primary way in which environmental issues are often framed, it nevertheless holds the possibility of providing an on-ramp for "conservatives" to engage in ecopolitical witness. These Adventists were concerned not primarily for the air, animals, or an abstract "environment," but for the human bodies that were being defiled by coal pollution. Though such an ethic is often criticized for being "anthropocentric," it is difficult to see how this is so. The ethic turns on the reality that it is God's Spirit that dwells in human

In short, the human is called to treat him- or herself and others as God's temple and to keep God's temple holy by clearing away the "moneychangers" who would reduce it to its exchange value within restricted, human economies.

E. Sacrifice and Power

In this chapter's epigraphs, Rutledge and Cone advocate rethinking the cross in terms of power. How is the constructive theory of sacrifice, as I have developed it here in terms of the priestly frame, to be thought of in terms of power? As I set out already, this ought to be the essential question for articulating an ecopolitical soteriology today that attunes and aligns the priestly, prophetic, and royal work of Christ, and therefore the vocation of humanity, to a contingent place in time, space, and society. I submit that the answer is to align the scandal of Christ's life and crucifixion with the triumph and redemption of the resurrection and ascension. It is, in short, to articulate a cruciform apocalyptic revealed in the Christ event and to which Christian action ought to bear witness. Truth is a person who went to a Roman cross, which was a method of execution, to "remember" the sacrificed and ungodly—which in the Old Testament sense means to take action on their behalf—to the garden-city of God by putting to death the old political ecology of Cain, clearing the air and soil of sin and its false sacrifices, and restoring the air and earth for the new creature to live as one made fully alive.[98] The human vocation to tell the truth, then, consists in bearing witness to this at-one-ing, re-membering event at the center of reality, and, by so

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flesh and makes it a temple. In other words, it is theanthropocentric. Even if it fails to meet dogmatic purity demanded by biocentrists, it nevertheless folds out into a complex ecopolitical practice that seeks to sanctify flesh that is caught up in a defiled ecology.

[98] Rutledge, *The Crucifixion*, 603: "Remembrance, in biblical terms, is the action of God. When, in prayer, God is asked to 'remember' someone, the plea is that God will take action on behalf of that person."

doing, channeling the power of truth-telling toward judgment, that is, righting wrongs. This is the political ecology of *sacrafice* as revealed in the person and work of Jesus Christ. I suggest that it is how Christ's priestly anointing as Sacrifice, Priest, and Temple ought to be aligned today with his prophetic anointing as Truthful Witness and his royal anointing as Powerful and Victorious Rectifier of wrongs.

Because of the once-for-all nature of Christ's priestly work, humanity is called to resist counterfeit sacrifices parroting salvation and to positively bear witness to the cosmic at-one-ment revealed in Christ's sacrificial life, death, resurrection, and ascension. And this is done by becoming a "living sacrifice." According to the author of Hebrews, responding to this calling entails no further sacrifice for sin but rather reorients our embodied life toward giving praise to God, doing good works, and sharing the earth's bounty with others. It means resisting being "led away by diverse and strange teachings, for it is good for the heart to be strengthened by grace, not by foods" (or, we might add, resources in general) sacrificed to idols and gods on counter altars.[99] It means "loving one another" as those made "brothers and sisters" in God's economy, "showing hospitality to strangers," and "remembering those who are in prison, as though in prison with them, and those who are mistreated."[100] In other words, becoming a living sacrifice, or fulfilling the human's priestly vocation, means taking action to re-member creatures in history, actions that bear witness to the reality that they are re-membered to and by God in eternity. This kind of sacrifice is good news, especially for the falsely sacrificed creatures who are either dis-membered or constantly threatened by dis-memberment from the community of life.

This constructive, Christological approach to ecopolitical *sacrafice* is not determined by any of the constructive theories of sacrifice and society surveyed earlier. While it may manifest as

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[99] Hebrews 13:9-10.
[100] Hebrews 13:1-3.

self-renunciation or as disciplining one's desire to consume, especially among the over-consumers, it is not wedded to or bound by an ecopolitics of austerity. It may involve self-sacrifice or an expanded conception of self-interest within a wider set of relations, as liberals propose, but it refuses to accept technological, scientific, policy, or market solutions that fancy change without conversion, salvation without a dying to one's old self. It may, in concert with neo-pagans, involve a critique of technology and its power to enslave humanity and the earth in a death-dealing, self-suffocating, and pointless extractivist machine, but it refuses to throw the proverbial human out with the extractivist bathwater by fetishizing some human return to animality or biocentric continuity. Though it can recognize the ambivalence of the technological and industrial arts as they are advanced by the children of Cain, it can also imagine beating swords into plowshares and pruning hooks; it can imagine refashioning the instruments of struggle into instruments of care, cultivation, and culture that re-member creatures to the community of life. It may involve casting a vision of an abundant and just future with reference to which present political conflicts and antagonisms have their place, but it will refuse to suspend ethical deliberation over appropriate means in order to achieve that vision. Rather, it tethers that vision and the means of its attainment to the cruciform apocalyptic of Christ's personal work—the Judge judged, the Priest sacrificed—on our behalf. In short, environmental sacrifices oriented by the political ecology of God are not determined by any natural theology of life, sacrifice, or justice but are open to discovering with others what it means to bear witness in particular contexts to God's atoning work as the center of creaturely time and existence.

This political ecology of *sacrafice* ultimately diverges also from two constructive theological accounts with which it otherwise shares much in common. The first is an account of Christian truth-telling and witness that takes martyrdom as its paradigm; it acts as if truth stands on one side and power on the other. Truth-telling, in this account, is a direct confrontation with

"the world," here associated with the reigning political authorities, which responds with coercive violence and persecution. The most faithful truth-teller is a dead one, one who bears witness with her bodily life to the reality of which she speaks—in short, a martyr. In this construal, truth-telling is bound up with a cruciform vision of sacrifice in which truth and power stand in opposition. It is akin to what Terrell termed a "hermeneutic of sacrifice." And it is represented by the formula, "speaking truth to power," first articulated by Bayard Rustin in the 1940s and then popularized by Quaker anti-war activists and civil rights leaders in the 1950s and 60s.[101] Regardless of what it may have meant then, it has been incorporated into a Hauerwasian approach to ecclesiology and ethics constructed around speaking and practicing the truth in a world that uses power to violently suppress it.[102] Truth-telling, in this view, becomes a heroic, self-sacrificial stance against those who wield power.

This martyrological account of truth-telling testimony is not wrong so much as it is partial. In Terrell's terms, it divorces a "hermeneutic of sacrifice" from an agency-empowering form of "sacramental witness." It magnifies one real aspect of truth-telling in a sinful world but fails to incorporate the full significance of creation's Christological center, a center that opens all of creation to God's transformative and redemptive work. Speaking the truth is necessary, but, in Peter's words, "Truth doesn't sell itself."[103] Truth-telling is a way to build power, not merely a way to confront it. Truth-telling, in Rutledge's apocalyptic terms, testifies to a real regime change effected by the Christ event. Its real basis is in the Author who authorizes true political authority, the judged Judge who judges the world's unjust orders, the sacrificed Priest who transforms the

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[101] Interestingly, Rustin's formulation may have been influenced by a saying from the Prophet Muhammed, "The most excellent *jihad* is when one speaks a true word in the presence of a tyrannical ruler," *jihad* meaning struggle; Mishkat, XVIII, Ch. I.

[102] I address this "Hauerwasian" approach in this dissertation's introduction and again in chapter five.

[103] Fieldnotes, 10/12/17; 10/10/17.

world's economies of false sacrifice. As Oliver O'Donovan noted with respect to politics, while Christian political witness may in some contexts result in martyrdom at the hands of kings and emperors, it may also result in kings bowing the knee to Christ.[104] The world, in other words, also has its witness to bear to God's work in Christ.

The other account with which my own shares some affinities and yet diverges from is a contemporary social theory rooted in the work of Joseph de Maistre, Emile Durkheim, Mary Douglas, and Terry Eagleton—particularly the latter two—that foregrounds the ambivalent nature of sacrifice. In contrast to the antinomian attitude of post-structuralists who pit ethics against order, surplus against system, gift against economy, becoming against being, and grace against nature, these thinkers paint a more complex account than a simple affirmation of transgression and a rejection of system. Whether post-structuralists associate sacrifice with surplus, as Bataille does, or with order, as in Girard's theory, they nevertheless resolve its ambivalence by embracing or rejecting it in the name of transgressive affirmation. But in a counter-tradition stemming from Durkheim's social theory of the sacred, the ambivalence of sacrifice stems from associating the sacred both with order and with that which cannot be ordered, the latter having the capacity to disrupt, dissolve, or renew the order itself. Both order and the dirt it produces contain elements of the sacred. In their encounter and attempts to deal with death and decay, social orders produce the very dirt and defilement that, by being incorporated back into the system through sacrifice, contain the power to completely break that system open and refashion it anew. This inclusion through sacrifice of the excluded, uncategorizable, and defiled matter cannot happen incrementally in a slow evolution. It thus renders false the liberal notion that you can have inclusivity without revolution. In the Catholic eucharistic imagination of Douglas and Eagleton,

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[104] Oliver O'Donovan, *The Desire of the Nations: Rediscovering the Roots of Political Theology* (Cambridge: Cambridge University Press, 1996), 217.

eating the body of the one who absorbed the dirt and defilement is a putting to death of the old so that the new might come into being. In Eagleton's account, the Apostle Paul's "shit of the earth" are also Marx's "proletariat," the living dead who possess the power to become a living sacrifice that promotes a general flourishing.[105] Jesus is the ultimate scapegoat, or *pharmakos*, who, when received into the individual or social body, offers freedom and new life in and through death and its contamination.[106] The ritual of baptism initiates membership into this life in a solemn embrace of the death and suffering that makes a new creation possible. Aligned with neither order nor transgression, this is a theory of sacrifice as holding the ambivalent power to sustain, break down, and build up; to make, dissolve, and remake orders and systems. To recognize the social significance of sacrifice, in this sense, is to reject the conservative sacralization of (even unjust) social orders, the post-structural fetishization of transgression, and the liberal, incremental integration of the excluded into an existing and progressing order. Coming to terms with the ambivalence of life and death in sacrifice entails sustaining what is just about an order, upending unjust orders, and giving birth to new ones.

However, my account differs from this ambivalent theory of sacrifice and society with respect to its debt to natural law thinking. From de Maistre to Douglas and Eagleton, theology and culture are correlated through a natural law framework that permits them to theorize some providence-like force in history, something akin to Hegel's master-slave dialectic, that can end up perfecting the wrong nature. They insufficiently protect against perfecting false sacrifice as if it were a Christic force, or, perhaps more likely, making peace with and defending death-dealing practices as part of a larger providential purpose. In contrast, on the Barthian account I have sketched, if there is any practice of genuine sacrifice in human societies, it has its being in

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[105] Terry Eagleton, *Radical Sacrifice* (New Haven, CT: Yale University Press, 2018), 142-81.

[106] Ibid., 54: "Christianity is the point at which sacrifice becomes subversive. … Every political regime stands under the judgement of the cross." For Christ as the *pharmakos*, see 143.

Christ's once-for-all priestly work in his life, death, and resurrection. It can only be a sign or testimony to the truth of priesthood, sacrifice, and temple in the person of Jesus Christ. In other words, Christ causes a crisis for our conceptions of sacrifice, judges them, and gathers them into a new calling and purpose as testimony. With respect to the Restoring Eden projects, gathering empirical data to make visible the true costs of coal might, on this reading, be a central practice in a priestly political ecology of *sacrafice*.

IV. A Tradition of Restorative Truth-telling

The Restoring Eden projects organized the power of truth-telling by developing what I call "technologies of truthful testimony." In this final section, I develop this concept by drawing connections between their citizen science projects, the work of the Equal Justice Initiative, and what I theorize is a tradition of responding to false sacrifices in the Americas with truth-telling practices and technologies.

I have thus far suggested that Restoring Eden's citizen science projects should be understood as a priestly act that bears witness to the reality that falsely sacrificed creatures are re-membered to God in Christ. However, Restoring Eden is far from alone in this work. Most proximately, they found an ally and example in the Equal Justice Initiative's practice of restorative truth-telling through embodied acts of re-membering. Similar to the way in which EJI put truth-telling in service of re-membering the lynched, Restoring Eden put truth-telling in service of re-membering the human and otherkind creatures inhabiting extractivism's sacrifice zones—those who live under threat of being choked out of and dis-membered from the community of life.

In their respective responses to false sacrifices, Restoring Eden and EJI developed innovative technologies of truthful testimony. They gathered together existing practices and tools,

and sometimes fabricated new ones, to meet the particular goal of bearing truthful witness to events or realities otherwise defined and largely concealed by false witness. EJI, for instance, adapted the Holocaust museum's display of shoes by collecting and displaying soil from lynching sites that counters the false testimonies and sacrifices of those who participated in the lynchings. Another example is their plan to have each county in which a lynching took place come to claim their county's casket so that the lynched might be concretely re-membered in a material practice. In the case of Restoring Eden, a technology of truthful testimony was their combining citizen science, short-term mission trips, and creation care activism that resulted in new data about the invisibilized health effects of coal mining and waste. In the cases of both EJI and Restoring Eden, the goal was to make some heretofore invisibilized reality visible in a way that might help to re-member the falsely sacrificed, the victims of false witness.

This work of both Restoring Eden and EJI can also be understood to be part of a larger and longer tradition. I hold that there is a largely under-theorized tradition of developing new technologies of truthful testimony in response to, and to build power against, the colonial, racialized, and unjust encounters that have taken place in the Americas. Many have celebrated the particular historical figures of Ida B. Wells and Bartolomé de las Casas for taking a stand against injustice, but few have examined and theorized the tools of testimony they devised to try to empower their efforts and make their stand effective in catalyzing change.[107] Though I address in the next chapter how science can be an ally of truthful witness, my purpose here is to theorize a distinctly Christian tradition of practice that developed in response to false sacrifices and the unjust ways they bound together people and land in the Americas.

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[107] For an account of the work of Ida B. Wells, see Angela D. Sims, *Ethical Complications of Lynching: Ida B. Wells's Interrogation of American Terror* (New York: Palgrave Macmillan, 2010).

As mentioned in the first chapter, Ida B. Wells was one of the leading lights in this tradition. Once she realized that public justifications of lynching were based on false witness and propogated through false theories of concupiscent and bestial blackness, she fought these with truth-telling. Her investigations showed that many African Americans were lynched because they threatened the social, moral, and economic structure of a society ordered by a race-based hierarchy. In other cases, as in the Atlanta riots, she showed that many were lynched simply because they represented someone else: by virtue of their racial identity, they were seen to share the guilt of what another Black person was alleged to have done. As a working journalist, she used interviews, news reports, and other methods of empirical research to investigate the accurate causes of lynchings across the South. Then she published her findings in pamphlets that were circulated through ecclesial channels, African-American media, white ally networks, and her own speaking tours. She sought in this way to guide public opinion and the existing legal system toward a truer justice and to thus undercut the "unwritten law" that served to publicly justify lynching in practice.[108] She collected facts that could be used to rectify a system that was too often guided by false but powerful theories that justified lawless perpetrators and provided cover for their "outlawry."[109]

In a priestly framing, we could say that Wells sought to clear away the false theories that polluted the justice system, prevented it from fulfilling its function, and actually inverted it to become a system that provided cover for false witness and therefore also false sacrifice. Far from an antinomian desire to transgress the justice system, her goal was to make it possible for that

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[108] Ida B. Wells-Barnett, *Southern Horrors: Lynch Law in All Its Phases* (New York: New York Age, 1892; Project Gutenberg, 2005), subsection entitled "The Malicious and Untruthful White Press," [h…w].gutenberg.org/files/14975/14975-h/14975-h.htm.

[109] Ida B. Wells-Barnett, *The Red Record: Tabulated Statistics and Alleged Causes of Lynching in the United States* (1895; Project Gutenberg, 2005), subjection entitled "A Field for Practical Work," [h…w].gutenberg.org/files/14977/14977-h/14977-h.htm.

system to serve the pursuit of a truer, higher justice. Her hope that rigorously collected and organized facts could condition a better justice system was founded in faith. Because "God is not dead, and His Spirit is not entirely driven from men's hearts," she believed that there was a "moral conscience of the nation" that could be awakened. And upon its awakening, she said, "it will need facts to use as a weapon against injustice, barbarism and wrong. It is for this reason that I carefully compile, print and send forth these facts."[110] Trusting that the Spirit of God was alive in the world blowing the embers of moral conscience, she knew that if the flames were ever going to purify the system they would need more fuel. Facts were that fuel. In short, Wells gathered together a set of tools and relational networks, from journalistic methods and legal documents to activist and church networks, and paired them with what she believed to be true of the living God in order to innovate a technology of truthful testimony that many have credited with changing the tide in the struggle against lynching.[111]

But while Wells talked about her actions in relation to her faith, the wrongful nature of lynching was so clear to her that she felt little need to expound upon the depths to which it contrasted with what her friend Frederick Douglass called "the Christianity of Christ."[112] Although Wells never made the connection in her written work between the lynching tree and Christ's cross, James Cone does. He argues, against Delores Williams, that Wells is one of the primary examples of a Black woman who was empowered by faith in the crucified and risen

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[110] Ida B. Wells-Barnett, *Mob Rule in New Orleans: Robert Charles and His Fight to Death, the Story of His Life, Burning Human Beings Alive, Other Lynching Statistics* (1900; Project Gutenberg, 2005), subsection entitled "Introduction," [h…w].gutenberg.org/files/14976/14976-h/14976-h.htm.

[111] W.E.B. Du Bois called Wells "the pioneer of the anti-lynching cruside," who "began the awakening of the conscience of the nation." Quoted in Cone, *The Cross and the Lynching Tree*, 126.

[112] In the appendix to his *Narrative of the Life of Frederick Douglass, an American Slave* (Boston: Anti-Slavery Office, 1845), Frederick Douglass distinguishes between "the Christianity of this land" and "the Christianity of Christ," when he says that between the two "I recognize the widest possible difference—so wide, that to receive the one as good, pure, and holy, is of necessity to reject the other as bad, corrupt and wicked" (101).

Christ to become an agent of change for freedom.[113] If not so much in her words, Cone says that we can see in her praxis the necessary "imagination to relate the message of the cross to one's own social reality, to see that 'They are crucifying again the Son of God' (Heb. 6:6)." Jesus, he says, "was crucified by the same principalities and powers that lynched black people in America."[114] Cone argues further that the cross and the lynching tree are connected in that they are both caught up in a struggle between competing economies and ecologies of sacrifice.[115] Adapting an insight from Jon Sobrino, Cone says that there are today many "crucified bodies in our midst," in whom American Christians can "encounter the real scandal of the cross."[116] The human task as it is given shape by Christ's cross is to take these crucified down off their crosses. Apart from such a vocation, Christ's cross is at risk of becoming a symbol of abstract and sentimental false piety. Apart from the lynching trees—and their contemporary analogues, such as sacrifice zones—Christians are perennially at risk of forgetting the scandal that is Christ's cross or, worse, beating that cross into a sword.

This task of taking the crucified down off the cross is what Cone thinks Wells so successfully accomplished. In her work she bore witness to the complex reality in American history that Blacks and whites are bound together by competing sacrifices that move in different directions, one toward brutality and the other toward beauty. "Blacks and whites," he says, "were made brothers and sisters by the blood of the lynching tree … and the blood of the cross of Jesus." But, he continues, "No gulf between blacks and whites is too great to overcome, for our beauty is more enduring than our brutality. What God joined together, no one can tear apart." The

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[113] "What was it that gave Wells the courage to risk her life for others she did not even know? … It was a faith defined by the cross and the black cultural resistance to white supremacy." Cone, *The Cross and the Lynching Tree*, 130.

[114] Cone, *The Cross and the Lynching Tree*, 158.

[115] Cone often portrays these in terms of a contest between white and Black Christianities, the former being "a counterfeit gospel" that has "lynching as a part of its religion." Ibid., 132-33.

[116] Ibid.

power of the crucified Christ is this power to join together—to re-member—the falsely sacrificed and the false sacrificers by a different blood that overcomes counterfeit blood-and-soil theologies. It is the power to re-member the most brutally dis-membered to one another in a new, beautiful future and by new forms of communication. If the contemporary crosses of lynching and mass incarceration—Cone's examples, to which, following a suggestion by Emilie Townes, we could add sacrifice zones—help the church remember the scandal that is revealed in the cross, thus guarding against abstract and sentimentalized theologies of the cross, the cross of Jesus also reveals that these contemporary crosses are more than abominations. By the light of the cross, mass incarceration and sacrifice zones are more than instances of injustice played out again and again, as if on repeat. Christ's cross provides "the confidence that there is a dimension to life beyond the reach of the oppressor."[117] The cross reveals a truth that renders something so sacred that nobody can ever defile it. It reveals that today's sacrifice zones are not fully defined by extractivism's false sacrifices but are also where God's Spirit is at work rendering defiled matter sacred. In so doing, the cross works within and inhabits a brutal economy of false sacrifice in order to make possible new, beautiful ways of binding together lives and lands by Christ's one true sacrifice.

In addition to Wells, another key figure in this tradition is Bartolomé de las Casas. He, like Wells, devised written technologies of truthful testimony, particularly the one he called "The Brief Account."[118] He wrote his brief account of the destruction taking place across the Atlantic during what he perceived as a window of opportunity and openness among the Spanish court. It was his way to narrate the vices that he thought were governing the Spanish endeavor in the Americas. Having witnessed these vices through firsthand experience, he recognized that the

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[117] Ibid., 161.

[118] Bartolomé de las Casas, *A Short Account of the Destruction of the Indies*, ed. and trans. Nigel Griffin (New York: Penguin Books, 1992).

Spanish endeavor's justification at the highest levels rested on a theology of evangelization and virtue that utterly contrasted with what he witnessed on the ground in the Americas. This was the disorienting, almost inconceivable gap that he sought to bridge. Though the *encomienda* system had appealed to the highest ideals of evangelizing and civilizing the Amerindians, he argued with empirical evidence that it was, in practice, a system of cruel slavery and death that tarnished the entire Spanish enterprise in the New World, rendering it unlawful by both nature and grace. Rather than opening up evangelistic opportunities, he argued that the *encomienda* system was blocking them. For instance, he recounted the story of the cacique Hatuey who said that it was gold that was the Spaniards' God, and, when he was told that Spaniards would be in heaven, that he would rather go to Hell than have to see these brutes in heaven.[119] Paired with estimated numbers of those killed and sent to die in the mines, las Casas sought to communicate the jarring gap between the colonial ventures' justification and support in Spain and its brutality and false witness in the Americas. Like a careful historian, he collected numbers, stories, documents, testimonies, and his own eyewitness observations to argue in the *Brief Account* that there was a pattern to the Spanish conquest and its *encomienda* system: It turned virtuous Christian Europeans into vicious and unlawful brutes, thus tarnishing the name of Christ and impeding any authentic evangelistic mission. Spanish individuals who participated in the polluted *encomienda* economy would themselves become polluted agents of further defilement.

In the *Brief Account*, las Casas drew a distinction between those Europeans who observed (or even participated) in these events, on the one hand, and those who, like he and many missionaries, witnessed them. The former closed their hearts and "turned a blind eye" to what they observed, while the latter opened themselves to the moral and religious call that their observations occasioned; in view of what they witnessed, they challenged their compatriots to

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[119] Ibid., 27-28.

pursue a higher path. Witnesses documented the atrocities that inverted and polluted the meaning of Christian language and liturgical practices in the Americas. This is why, according to one commentator, las Casas was "in a time of conquest / a voice of protest / a witness to the Truth."[120] The historical, on-the-ground truths of the conquest and colonization had become obstacles to the reign of Truth that was said to guide the endeavor at all levels, from the popular level to the highest echelons of the empire. In response to so many failed witnesses and false sacrifices, las Casas devised technologies of truthful testimony that might restore the possibility of Christ's true sacrifice becoming a reality in the Americas.

This connection between witness and sacrifice can be seen in what was a defining moment in las Casas's call to defend the Amerindians. While las Casas only slowly came to embrace his call to defend the Amerindians, it was a journey punctuated by a number of particular moments of rupture. Biographers point to one particular such moment that set the course for the rest of his life. It came in 1514 when he was invited to celebrate mass, preach, confess, and deliver the Eucharist before the governor and Spanish settlers in Cuba. As he prepared himself for the occasion, he encountered a passage from Ecclesiasticus (Sirach) 34 that changed him and ultimately set the trajectory for all that he did thereafter. It read,

> If one sacrifices from what has been wrongfully obtained, the offering is blemished; the gifts of the lawless are not acceptable. The Most High is not pleased with the offerings of the ungodly; and he is not propitiated for sins by a multitude of sacrifices. Like one who kills a son before his father's eyes is the man who offers a sacrifice from the property of the poor. The bread of the needy is the life of the poor; whoever deprives them of it is a man of blood. To take away a neighbor's living is to murder him; to deprive an employee of his wages is to shed blood.

This passage on the dangers and character of false sacrifice helped him to realize that "everything done to the Indians in these Indies was unjust and tyrannical," and so he "decided to preach

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[120] George Sanderlin, ed., *Witness: Writings of Bartolomé de las Casas* (Maryknoll, NY: Orbis Books, [1971] 1993), front cover.

that."[121] But before he could preach it to the desired effect, he realized that he had to live it. If his words were going to carry his intended meaning, then he could no longer try to show by example what a faithful *encomendero* looked like. He would have to deliver over the Amerindians that had been entrusted to him. He did this and never turned back. His sermon before the governor and *encomenderos* climaxed with the decisive point he saw at the heart of the Sirach passage: "You cannot be saved while still holding Indians!"[122] And then, following the example of the Dominicans who had refused to confess him while he participated in the *encomienda* system, he refused to confess any *encomenderos*. Soon after, and with the blessing of the Dominicans who had launched the campaign against Amerindian mistreatment, he returned to Spain to begin a new phase. He experimented with various ways of recounting the reality of the Spanish enterprise in the New World. This eventually culminated in his *Brief Account* and then his *History of the Indies*, which he wrote to counter the mythologized version being written by his enemy. Las Casas was moved by Sirach to teach that no true sacrifice could be offered in the Americas in the midst of an unjust system of conquest and *encomienda* founded on false witness. For those who refused to believe that that system was unjust, he provided various technologies of truthful testimony that might serve the function of clearing away the mythology and thus providing the conditions in which a true sacrifice might become a reality in the Americas.

According to Gustavo Gutierrez, Christ's cross was the essential cornerstone of las Casas's hermeneutic. Though many have seen in las Casas a proto-defender of human dignity and equal rights, Gutierrez argues that this characterization is insufficient because it marginalizes the theological core of his thought. "The core of Las Casas' theological thought," he argues, is that for las Casas, the Amerindians "are 'our brothers and sisters, and Christ has given his life for

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[121] Ibid., "Introduction," 4-5. See also the account in Lawrence A. Clayton, *Bartolomé de las Casas: A Biography* (New York: Cambridge University Press, 2012), 76-81.

[122] Clayton, *Bartolomé de las Casas*, 81.

them' to the point of identifying himself with these 'Indian oppressed.'" In other words, both Spanish and Amerindian can be at one only because both are re-membered to God in Christ. For Las Casas, the Amerindian was "more than an infidel, more than a non-Christian. [Las Casas] looked more closely, and saw someone poor, in the gospel sense. His life and work can only be understood from a point of departure in this germinal intuition." As las Casas put it, "of the least and most forgotten, God has an altogether fresh and vivid memory." "Christ did not come into the world to die for gold" but for the forgotten and dis-membered in order to re-member them as God's own. It was the pursuit of gold and the ambition for wealth that repeatedly put Christ to death. For las Casas, "Jesus Christ, our God," was present in the Indies, where he was "scourged and afflicted and beaten and crucified not once, but thousands of times, when the Spaniards devastate[d] and destroy[ed] its peoples."[123] According to Gutierrez, "We know the universal salvific memory of God thanks to," in las Casas's words, "'Our Lord Jesus Christ, who died for those people'," that is, "the disdained, forgotten peoples."[124] And insofar as Christians failed to treat the Amerindians as brothers and sisters, they were not in full communion with the re-membering God.

Gutierrez shows that the technologies of truthful witness las Casas developed were constituted from the start by a braiding together of revealed and historical truths and ultimately aimed toward creating the conditions in which those truths might reflect one another. Las Casas collected and narrated historical facts from an array of sources, including his own eyewitness observations, in order to argue that Europeans were negating Christ's cross in the New World and suggest alternative practices that might bear witness to the revealed truth that Amerindians and

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[123] Gustavo Gutierrez, "Forward" to *Witness: Writings of Bartolomé de las Casas*, ed. George Sanderlin, trans. Robert R. Barr (Maryknoll, NY: Orbis Books, 1993 [1971), xx-xxii (emphasis added).

[124] Gustavo Gutierrez, *Las Casas: In Search of the Poor of Jesus Christ*, trans. Robert R. Barr (Maryknoll, NY: Orbis Books, 1993), 272.

Spanish were bound together by Christ's blood. In his technology of truthful testimony, las Casas interweaved the theological truth that Jesus Christ re-members Spaniards and Amerindians to God with the empirical truths he and his companions witnessed firsthand. He sought ultimately to create the conditions in which revealed and historical truths might reflect one another.

Conclusion

In sum, examined within the terms of the priestly frame, the human is called and sanctified to become a priestly member of creation who tells the truth in speech and action that creatures are, by God's grace, re-membered to the garden-city of God. Following the pattern laid out by the true Priest, Sacrifice, and Temple that is Jesus Christ, humanity is called to move toward the world, particularly toward its sacrifice zones, and work to clean up the polluted ecology so that God's creatures might commune with the giver of Life in the habitat of grace made possible by God in Christ. In short, Christian witness is a political ecology. It is an ecopolitics of *sacrafice* that renders sacred that which has been defiled by rival political ecologies of sacrifice. The rival that is perhaps most in need of direct confrontation in this way today is extractivism. Its naturalistic and humanistic vision of life and the means of its attainment renders the whole world sacrificable in the worst way. The tradition that I identified with las Casas, Wells, EJI, and Restoring Eden—a tradition of countering false sacrifice with forms of truth-telling that build power for change—provides a vision for how to confront this extractivist political ecology. It weaves together different ways of seeing and knowing into a vision of how truthful description can be a powerful force for environmental justice today. It shows that the right place for empirical description is within the wider processes of practical reasoning about what is to be done about environmental problems. We must not treat science as if it could tell us what to do. But we cannot deliberate over what is to be done during this age of extraction without it. I take up the task of bringing this

chapter's ecopolitical theology of *sacrafice* into a constructive vision of science in the next chapter.

Chapter 5. The Witness of Citizen Science

Thy kingdom come … on earth as it is in heaven.
- The Lord's Prayer

Can science tell us what a mountain is? What it means? How we should relate to it? Or what we should do with it? If it could tell us these things, there would be sufficient reason to put decisions regarding environmental, health, and other matters of public concern solely in the hands of scientific experts and managers. If it could not tell us these things, then calls to "trust the science" or "follow the science" would be foolish. The position I defend in this chapter is that science is insufficient to tell us what a mountain (or coal, oil, a tree, or an elk) is, what it means, and how we should relate to and act toward it. But my intent is not to denigrate science and scientists; just the opposite, it is to valorize scientific ways of knowing by integrating them with other ways of knowing in a constructive proposal for how knowledge can be produced more democratically and in a way that opens up public deliberation over pressing matters of concern in our context of religious, moral, and epistemic plurality.

This is a proposal for a "priesthood of all knowers." Building on my argument in the previous chapter that restorative truth-telling is priestly work—it bears witness to the truth about dis-membered and defiled creatures that they are reconciled to God in Christ and renewed by the Holy Spirit—I argue here against a scientific clericalism. This is when a technocratic class of epistemic elites evades democratic deliberation by over-claiming its epistemic authority in matters of public concern.[1] A characteristic damage of human priesthoods is that they tend toward

[1] Luke Bretherton defines technocracy as a form of antipolitics that "is constituted by the rule of the few over and against the many. It grows out of attempts to overcome the need for learning and

establishing and reproducing a restricted class of mediators between God (or Nature) and humanity that is walled off from lay intervention and critique. Taking a page from the Protestant Reformers' playbook, however, I propose that the best response to scientific clericalism is not to eliminate priests but to redefine and universalize priesthood, for Christ is the sole mediator between God and creatures. As Karl Barth said of the doctrine of universal priesthood, its purpose was, and is, to remove any barriers between clergy and laity that obstruct the vocation of all creatures to bear powerful witness in the world to the self-revealing God as its creator, reconciler, and redeemer.

Science—my shorthand throughout this chapter for modern scientific practices, institutions, and knowledges—is not sufficient for practical reasoning in what some call our "knowledge society."[2] The truths it produces are limited. My tasks in this chapter are to name the character of science's limitations and suggest how other modes of truth might properly orient science's empirical findings. In the account I develop, science is best understood as one essential aspect of describing the world—what is, in truth, going on—that is inescapably and complexly bound up with other ways of describing the world and what is true of it. And if practical reasoning traverses the territory between what is true about the world and what is to be done in any particular context, then wise, fitting action requires truthful description.[3] The political

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practicing the craft of politics … through different forms of legal, bureaucratic, and market-based procedures. … [T]echnocracy is about following a bureaucratic procedure, conforming to regulations, or applying an economic 'law' regardless of whether these actions contribute to building up a just and merciful common life." *Christ and the Common Life: Political Theology and the Case for Democracy* (Grand Rapids, MI: W.B. Eerdmans Press, 2019), 37-39.

[2] "Knowledge societies" are societies in which the production and distribution of knowledge are fundamental processes in a society's fabric, as defined in Fernando Domínguez Rubio and Patrick Baert, "The *Politics of Knowledge*: An Introduction," in *Politics of Knowledge*, eds. Fernando Domínguez Rubio and Patrick Baert (New York: Routledge, 2012), 1.

[3] See, for example, Oliver O'Donovan's definition of practical reason: "Practical reason correlates the actions we immediately project with the way things are. … Practical reason cannot be intuitive reason;

problem, of course, is that people describe the world differently when they describe it truthfully, according to their different criteria for truth; their differing claims to truth stand in tension with one another, sometimes in outright conflict; and, amidst asymmetries of power, some descriptions are taken as more authoritative than others. Oliver O'Donovan describes the situation well when he writes, "The knowledge of the world on which practical reason turns is always contested knowledge, not agreed." These are the conditions of knowing in time. "Disputes about the world mark all of our moral thinking this side of the vision of God; such are the cognitive conditions of the age of Ethics."[4] It is in the midst of descriptive tensions and conflicts in this "age of Ethics" that science has been asked to fulfill the impossible task of serving as a neutral arbiter between conflicting beliefs and opinions in the construction of a rational, peaceful, and just society. Yet, as I will argue, science is not neutral; its facts cannot somehow transcend this "age of Ethics"; scientific practices, institutions, and knowledges are enmeshed within social and political relations that are themselves complexly characterized by finitude, fallenness, and faithfulness. If science is going to aid public deliberation and collective action in our time of human plurality, then the limited truths it speaks need to be theorized together with other truths. The other truths that I explore here are moral and theological in nature.

The question of this culminating chapter is this: If science is not a neutral arbiter of truth claims about the world, appeals to which can neutralize human difference, then what is it? I suggest that science is caught up in the tensions I described in the previous chapters between rival political ecologies of sacrifice and economies of life and death in a world that is created good,

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it cannot pocket its ball in one shot. It has to negotiate a way between the two poles of description and resolution, the one determinate and the other indeterminate." Oliver O'Donovan, *Self, World, and Time: Ethics as Theology, Volume 1* (Grand Rapids, MI: W.B. Eerdmans Publishing Co., 2013), 29.

[4] Ibid., 30.

conditioned by sin and its curse, and reconciled to and renewed by God. In short, science is caught up in the rivalry between ecopolitical theologies, aiding and abetting one of them against the other here and doing the opposite over there. Because, as I will argue, a neutralist conception of science is closely associated with the normative project of secularism, in this chapter I will examine relations between science, sacrifice, and society in a secular age. Through engagement with Luke Bretherton, I show how Christian thought helps to construe the secular in terms of mutuality rather than neutrality. Christian thought construes the secular in terms of coming to contingent judgments with diverse others in time and space rather than divining action by appeal to the elite knowledges mediated by experts. In the latter case, drawing on a metaphor from Plato's famous fable, the intellectually enlightened mediate true knowledge to those who confuse mere shadows of truth with the truth itself. As Bruno Latour observed, Plato's cave myth still explains the social distinction operative today between priestly and lay knowers.[5] However, Scripture offers a different metaphor: "the people dwelling in darkness have seen a great light, and for those dwelling in the region and shadow of death, on them a light has dawned."[6] The proper distinction is not between those who, having left the cave, possess real knowledge, on the one side, and those who possess lesser, shadowy versions of it, on the other, as in Plato's myth; it is between we—all of us—who inhabit the shadowy darkness of death and the Light of Life that has come into the world to dispel the darkness. In this latter economy of illumination, all creatures—human and otherkind—have their unique witness to bear to the Light that lightens the world. Science is but one way some of these creatures attend to others.

In this chapter, I recapitulate the themes I addressed in the first chapter on methodology. There, my tasks were to describe the way in which Restoring Eden made methodology a site of

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[5] Bruno Latour, *Politics of Nature: How to Bring the Sciences into Democracy* (Cambridge, MA: Harvard University Press, 2004), 10-18.

[6] Matthew 4:16.

environmental practical reasoning and to reflect on how those projects helped me clarify my own methodology in this study. I demonstrated that the Restoring Eden citizen science health studies made the invisibilized human and ecological costs of coal and oil visible in numbers, charts, and graphs in order to open up and reorient public debates about fossil fuels. Supporters of the coal industry in Appalachia responded with a two-pronged approach to both delegitimize the group's findings and endow an industry-friendly research institute with $15 million to produce counter-research. The ensuing conflict of knowledges took place in media, courts, governmental agencies, and legislative houses. After the federal government set up a scientific panel to review the conflict and assess the state of knowledge about the health effects of mountaintop removal, the Trump Administration cut off the panel's funding and ended their work before the panelists were able to write their final report. I argued that the Restoring Eden project organizers' practical genius lay in the way they showed research methods and methodology to be essential to the work of generating collective environmental action. Through community health science they enabled erstwhile watchers to become authoritative witnesses whose testimonies could aid just judgments on fossil fuel matters in the courts of law and public opinion.

In subsequent chapters, I theorized that these conflicting knowledges generated by citizen science, on the one hand, and industry science, on the other, were rooted in a conflict between rival political ecologies of sacrifice, or economies of life and death. I argued in chapter two that the places where Restoring Eden organized their health studies should be understood as sacrifice zones. I also observed that these sacrifice zones were sites of tension and conflict between rival political ecologies of sacrifice. In the following two chapters, then, I developed a hermeneutical aid to judgment by theorizing these rival political ecologies. In chapter three, I theorized sacrifice zones as a product of extractivism's death-dealing political ecology of false sacrifice. In chapter four, I argued that Restoring Eden's citizen science, as a practice in restorative truth-telling,

should be understood in relation to a tradition of practicing a political ecology of sacrifice patterned after the priestly office of Jesus Christ. I argued in particular that a priestly political ecology of sacrifice entails responding to the human vocation to marry truth-telling, power, life, and witness through developing technologies of truthful testimony.

In this chapter, I revisit the case as a whole in light of the analytical and theoretical work developed in the last few chapters to examine the question of epistemology and the relationship between science, society, and sacrifice. What economies of life and death are science and society constituting? I make both descriptive and normative claims. At the descriptive level, I theorize scientific practices, institutions, and knowledges as caught up in these rival political ecologies of sacrifice, either aiding and abetting the secularist production of society and nature as sacrificable resources or holding society and nature open to a pluralistic, mutualistic secularity in which common norms and practices of description are discovered when people from diverse worlds work together to address environmental problems. At the normative level, I argue that a Christian theological notion of the secular as a marker of contingency and penultimate concerns ought to align science with a pluralistic secularity rather than a neutralist secularism. Finally, I close with a theoretical account of citizen science as restorative truth-telling as a threefold form of witness that holds scientific, empirical investigation accountable to moral and theological truths. I thus affirm the paradox that Christian particularity provides a robust framework for a democratic, pluralistic, life-affirming vision of science and society.

I. Science, Society, and Sacrifice

"What is the ethical obligation of the scientist who believes populations are in danger?" So began Michael Hendryx's 2017 TEDMED Talk on his research into the human costs of mountaintop

removal mining in Appalachia.[7] He had begun asking himself the question after his research showed that its costs were alarmingly high. As he unfolded his question further, Michael raised questions like those I explored in the first chapter: "How much evidence is enough to be confident of our conclusions? Where is the line between scientific certainty and the need to act?"

Thus far, I have largely told the story of the health studies from the perspective of Restoring Eden through the accounts of Peter and Sarah. What follows is the story told from the perspective of Michael, the lead scientist.

In 2006, shortly after Michael took a position in rural health at West Virginia University, he started to research the health effects of mountaintop removal. At that time, he said, "I started to hear stories from people who lived in these mining communities. They said that the water they drank was not clean, that the air they breathed was polluted. They would tell me about their own illnesses, or illnesses in their family. They were worried about how common cancer was in their neighborhoods." In other words, they raised the kinds of questions he was trained to answer.

"I had no personal or organizational agenda," he quickly adds, no bias against the coal industry. Before listening to residents, "I hadn't done any research related to coal." But given the concerns he heard from them and the skillset he possessed, he thought, "I can make a new contribution, no matter what I find, either to confirm these concerns or to alleviate them."

But his colleagues were skeptical of the project. "They predicted that the health problems could be explained by poverty or by lifestyle issues, like smoking or obesity. When I started, I thought, maybe they would be right." However, after analyzing some existing databases, he said, "[our team] found evidence that confirmed the concerns of the residents, and we started to publish our findings." They found that

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[7] Michael Hendryx, "The Shocking Danger of Mountaintop Removal - and Why it Must End," filmed November 2017 at TEDMED, video, [h…w].tedmed.com/talks/show?id=689121 (the following quotes are from this talk).

> people where mountaintop removal takes place have significantly higher levels of cardiovascular disease, kidney disease, and chronic lung disease, like COPD. Death rates from cancer are significantly elevated, especially for lung cancer. We've seen evidence for higher rates of birth defects, and for babies born at low birth weight. The difference in rates of total mortality equates to about 1200 excess deaths every year in MTR areas, controlling for other risks.

They also saw evidence that death rates rose proportionally to levels of mining.

Then his team did a more granular analysis. "We started to conduct community door-to-door health surveys," Michael continued. Though he didn't name Peter or Restoring Eden in his TED Talk, these were the surveys born of their partnership to gather household-level data in mountaintop removal and control communities. "We'd survey people living within a few miles of MTR versus similar rural communities without mining. Survey results show higher levels of personal and family illness, self-reported health status is poorer, and illness symptoms across a broad spectrum are more common." The data was the first of its kind. To be even more thorough, Michael's team also tested water and air samples. Through dozens of studies using different kinds of data, a picture emerged of mountaintop removal's grave human costs.

Michael's ethical question fully surfaced only after colleagues and coal industry supporters actively refused to see this picture; many actively disputed it. "The coal industry does not like what we have to say. Neither does the government in coal country." He detailed their attacks against him and his research. Then he indirectly referenced the industry-endowed ARIES Institute at Virginia Tech. "Just like the tobacco industry paid for research to defend the safety of smoking, so the coal industry has tried to do the same by paying people to write papers claiming that MTR is safe. But," he added, even beyond the opposition by industry and the scientists they funded, "there is opposition from researchers, too. At conferences or meetings they express skepticism." As a scientist, he gets it. "Ok, we're all taught, as scientists, to be skeptical. … Technically, you have to acknowledge they could be right." This was why his team triangulated their studies with different methods and controlled every variable they could. "But," he said to

great laughter in the audience, “maybe these health problems are not the result of some unmeasured confound. Maybe they result from blowing up mountains over people’s heads!”

As the audience’s laughter subsided, Michael turned serious. “There could always be doubt if doubt is what you seek. Perhaps you can understand why I’ve started to wonder, ‘How much evidence is enough?’ I’ve published over thirty papers on this topic so far.”

Then Michael described a point where empirical observations reach their limit and other kinds of knowledge must take over. “There comes a point where we don’t need more research,” he said, a point when you must stop asking people to be research subjects in your next study. “As scientists, we follow the data wherever it goes, but sometimes data can only take us so far and we have to decide, as thinking, feeling human beings, what it means and when it is time to act.”

“What is your moral and ethical obligation?” he asked rhetorically. “Obviously, scientists are responsible for telling the truth, as they see it based on evidence. Simply stated, we have an obligation to stand up for the data,” especially in the heat of controversy. That’s when scientists are most at risk of succumbing to temptations and lesser motivations, like preserving their funding streams.

> But the more controversial the subject, the more frustrating the debate, the more critical it is for scientists to preserve our objectivity and our reputation for integrity, because integrity is the coin of the realm in scientific and public policy debate. In the long run, our reputation for integrity is the most powerful tool that we have, even more powerful than the data itself. Without an acknowledged integrity on the part of scientists no amount of data can ever convince people to believe painful or difficult truths.

The scientific enterprise is held together by scientists’ integrity—standing up for the data, whatever the cost. “When we cultivate and guard our reputation for integrity, when we patiently stand up for the data and keep doing the studies, keep calmly bringing the results to the public, that’s when we have our greatest impact. Eventually, scientific truth does, and will, win out!”

Michael closed his talk with a description of the honest, morally upright scientist whose rectitude bears the weight of existence: at stake in her moral journey are matters of life and death. "How many lives will be lost while we wait? Too many already. But prevail we will."

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The answer Michael gave to his question about ethics and science stands in tension with his actions. Ultimately, I think, his actions spoke louder than his words. With his words he championed the need for virtuous scientists, reinforcing some aspects of what I will examine below as "the liberal view" of relations between science, politics, and religion; yet his works, in particular his partnership with religious groups and activists and his confrontation with corporate, political, and scientific opponents, spoke to a more complex approach that it is my task to examine and ultimately explain in terms of a theory of the interrelations between science, society, and sacrifice.

Michael was trained as a psychologist. Though some of his opponents used this to discredit his work—for what could a psychologist possibly know about the health effects of coal mining?—his expertise was really in research design: How do you study health scientifically? His postdoctoral research at the University of Chicago, for example, was on methodology.[8] One might say he has a Ph.D. in the scientific method: He designs research projects and uses statistical methods of analysis that control for and isolate particular variables in order to identify correlations and patterns that rule out some causal theories and lend others more credibility. While some environmental scientists have claimed that Michael's research in Appalachia demonstrated causality—that mountaintop removal causes poor community health—Michael

[8] Interview with Michael Hendryx, 6/28/16. Unless otherwise noted, the following quotes from Michael Hendryx are from this interview.

himself never claimed to have proven causality.[9] For him, public health science has to do with the strength of causal associations between things; the ethical question, in his mind, stemmed from the need to act on imperfect, but seemingly enough, evidence. How should you act when there is no scientific certainty regarding causality, particularly when you think inaction means people will die?

Michael is a true believer in science who, like the founders of modern science, recognizes his own limits. He embodies the ideal of what Donna Haraway called "the modest witness," whose socially ascribed epistemic authority as a describer of nature rests not on his claims to certainty—for he recognizes the limitations of his research—but on his ascetic virtue.[10] In Haraway's analysis of how gender was remade through the institutions and technologies of experimental science in the seventeenth century, she argued that epistemic authority was socially ascribed to scientists, such as Robert Boyle, by virtue of their modesty: The modest witness's virtuous humility has elicited empirical scientists' social trust since Robert Boyle's experiments with the air pump. Michael advanced a view of science in society that placed this modest witness front and center. The unshakeable, upright, and always modest scientist that Michael described in terms of integrity at the end of his TED Talk is an apt description of himself. His Stoic-like commitment to truth in the face of adversity was not cheap; it was born of testing. Even after lawsuits and other attempts to silence and isolate him, Michael continues his research on the health effects of mining, burning, moving, and wasting fossil fuels. An empiricist true to form, when he reaches the end of his own expertise, he collaborates with other scientists and experts to

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[9] *Health and Environmental Impacts of Mountaintop Removal Coal Mining, Before the U.S. House Committee on Natural Resources, Subcommittee on Energy and Mineral Resources*, 116th Cong. 1 (April 9, 2019) (statement of Dr. Michael McCawley, Clinical Associate Professor, Department of Occupational and Environmental Health Sciences, West Virginia University School of Public Health).

[10] Donna Haraway, "Modest_Witness@Second_Millennium," *The Haraway Reader* (New York: Routledge, 2004).

design, analyze, and publish collaborative research. In spite of well-resourced and powerful opposition, he has courageously spoken truths to the public about industrial practices that he believes put communities in danger. His courageous truth-telling put his own career and reputation in jeopardy. It also changed things.

Whether or not the scientific truths he uncovered will eventually win out—it is still too early to judge—his work has certainly shaped scholarship and public debates about coal and its hidden costs. In the realm of scholarship, the four studies that resulted from his work with Restoring Eden have been taken up by scholars across a diversity of disciplines. For instance, a political ecologist used the work to theorize structural violence in Appalachia[11]; a group of social scientists integrated it into a new subfield of "green criminology," which studies environmental crimes[12]; a peace studies scholar applied it to understanding coal-related conflicts in Colombia[13]; a public health scientist and lawyer used it to analyze how science and ignorance shaped Appalachian social ecologies[14]; a group of health scientists adapted its methodology to study connections between health and fracking for shale gas in Pennsylvania[15]; and an environmental sociologist saw it as evidence of a shift among Appalachian social movements toward human

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[11] Erin R. Eldridge, "The continuum of coal violence and post-coal possibilities in the Appalachian South," *Journal of Political Ecology* 22, no. 1 (2015): 279-298.

[12] Michael J. Lynch, Michael A. Long, Paul B. Stretesky, Kimberly L. Barrett, *Green Criminology: Crime, Justice, and the Environment* (University of California Press, 2017).

[13] Shane Boeder, "At Any Cost: Big Coal Crushes Fragile Communities in Colombia," *Journal for the Study of Peace and Conflict* (2012-2013): 42-64.

[14] Sarah J. Surber, "The Scopes Monkey Trial Revisited: How the Coal Industry and the Surface Mining States Ignore Science to the Detriment of the Appalachian Environment," *Kentucky Journal of Equine, Agriculture, & Natural Resources Law* 6, no. 1 (2013): 59-99.

[15] Nadia Steinzor, Wilma Subra, Lisa Sumi, "Investigating Links between Shale Gas Development and Health Impacts through a Community Survey Project in Pennsylvania," *New Solutions: A Journal of Environmental and Occupational Health* 23, no. 1 (2013): 55-83.

health issues.[16] The research thus became part of a scholarly body of knowledge that scholars have drawn on to understand a wide range of phenomena.

Beyond the realm of scholarship, the research also shaped public debates and narratives about coal's hidden costs in Appalachia and beyond. The network of organizations and individuals opposing mountaintop removal liberally cited it on their websites, in their advocacy materials, and in public testimonies. Appalachian journalists covered each new study's findings in local and regional media.[17] Beyond Appalachia, three of the studies with Restoring Eden were cited in support of Human Rights Watch's argument that activists should foreground the human health costs of coal in their fight against fossil fuels.[18] All of these groups used the studies to rescue public debates about coal issues, and mountaintop removal in particular, from being stranded in a narrative of perpetual conflict between the economy (i.e. jobs) and the environment. Because so many environmental issues, especially around fossil fuels, are susceptible to capture by this entrenched narrative of conflict, activists often pointed to the studies as evidence of a need for the kind of integrated vision encapsulated by one Kentucky organization's motto, "What you do to the land, you do to the people."[19] In other words, it cannot be said that human goods (e.g. jobs) are on one side and environmental goods (e.g. biodiversity) are on the other; rather, a human health focus shows human goods are at stake on all sides. The studies, in short, fueled an uncoordinated shift among some activists and writers from coalescing a set of problems under the

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[16] Shannon Elizabeth Bell, *Fighting King Coal: The Challenges to Micromobilization in Central Appalachia* (Cambridge, MA: MIT Press, 2016).

[17] The award-winning, West Virginia-based journalist Ken Ward, Jr. is the primary example.

[18] Human Rights Watch is a New York-based international non-governmental organization. *The Coal Mine Next Door: How the US Government's Deregulation of Mountaintop Removal Threatens Public Health* (Human Rights Watch, December 2018), [h…w].hrw.org/report/2018/12/10/coal-mine-next-door/how-us-governments-deregulation-mountaintop-removal-threatens.

[19] See Kentuckians for the Commonwealth.

concept of "the environment" to gathering them together with concepts, like "integral ecology," that hold social and ecological issues together.[20]

The influence Michael's published research had on scholarly and public debates about collective environmental action, especially in response to mountaintop removal, is indisputable. But how did it happen?

There is much to that story that Michael's TED talk did not include. He celebrated the patient, calm approach to producing and standing by the empirical truths scientists discover, as if these truths, carried by the scientist's moral rectitude, spoke for themselves. However, as Peter once said, "Truth doesn't sell itself."[21] It is only part of the equation. It needs people, a narrative, and strategies to communicate it. For example, there were organizers, activists, religious groups, colleges, concerned residents, student volunteers, and journalists that both formed the social infrastructure of the projects and harnessed the power they afforded. Yet these groups were largely absent from Michael's TED talk narrative. While Michael did say that Appalachian residents generated the initial hypothesis that they were sick because of mountaintop removal, they thereafter dropped out of his story; more accurately, they dropped out as responsive agents who played a significant role in determining the trajectories of the studies. In actuality, residents, for instance, helped to carry out the studies and methodically put their findings before elected officials and regulatory agencies as urgent matters demanding a collective response.

But drawing attention to the human, social element in the production of scientific knowledge has not traditionally been a winning strategy; in fact, it has long been a way to challenge the status of a scientific fact. Bruno Latour examined this dynamic in his earliest work

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[20] Pope Francis advocates an "integral ecology" in Francis, "Laudato Si," *The Holy See*, May 24, 2015, [h…w].vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html.

[21] Fieldnotes, 10/10/17.

in science labs. In his ethnographic study of lab scientists, he demonstrated that a "fact" was the outcome of a social struggle to liberate a scientific finding from the historical forces and technologies that produced it; he also noted that one key strategy of opponents in that struggle was to draw attention to those historical forces and, by so doing, downgrade a "fact" to a mere "artefact," a product lacking in scientific authority.[22] Undoubtedly, this is why Michael felt a need to assert his objectivity and thus hedge himself against claims of anti-coal bias. If drawing attention to the social dimensions of the studies would delegitimize his findings, why would Michael draw attention to them? Besides, his opponents were already busy doing this, narrating Michael as a footsoldier in the Obama-era "war on coal."[23] Michael himself even deployed a similar delegitimizing tactic in his talk when he tried to shift that social attention back in the other direction, suggesting that industry-funded researchers were the real money-chasing, biased actors because they produced analyses that were true to their corporate funders' interests. Instead of tackling this question of science's social production within fields of power, bias, and interest, Michael chose to reinforce the epistemic authority of scientists by appealing to the moral commitment to objectivity he called "integrity." For him, the burden of building a rational and just political ecology falls squarely on the virtuous scientist who remains true to the empirical data in the face of temptations on all sides.

Without denying a need for virtuous scientists—and bracketing that issue here—the fuller story of the health studies nevertheless should be told and theorized if we are to understand

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[22] Bruno Latour, *Laboratory Life: The Social Construction of Scientific Facts* (Beverly Hills: Sage Publications, 1979), 176.

[23] One clear example is when, during his Congressional testimony, Rep. John Fleming drew attention to the fact that it was "an environmental organization" that collaborated with him in carrying out the studies. *H.R. 1644 (Mooney), To amend the Surface Mining Control and Reclamation Act of 1977 to ensure transparency in the development of environmental regulations, and for other purposes, Before the Subcommittee on Energy and Mineral Resources*, 114th Cong. (May 14, 2015) (Statement of Representative John Fleming), [h…w].youtube.com/watch?v=iNaOsilGUOg.

science in relation to society.[24] Otherwise, there is a temptation to think that matters of public concern, such as coal use and mining methods, come down to the agency and morality of individual scientists. The temptation, in other words, is to think that scientists—good (i.e. possessing integrity) or bad (i.e. chasing money)—are the primary agents of environmental knowledge production and ultimately, given the dependence of collective environmental action on what is known about environmental problems, environmental action itself. As the case of the health studies shows, however, there were social practices, processes, and institutions on all sides of the science about mountaintop removal. There were also religious individuals, knowledges, and dynamics on all sides, as well. This is what needs to be understood. Neither the studies nor their impact on scholarly and public debates would have materialized without Michael's patient scholarship and steadfast commitment to empirical truths in the face of adversity. However, we need an account of these studies that can at once uphold the need for virtuous scientists and do justice to the practices, technologies, and social relationships that constitute particular assemblages of science and society in Appalachia's sacrifice zones.

These are the contours of the whole story, though previously told in pieces, recorded here more fully: During the month of March every year between 2011 and 2014, evangelical Christians, activists, college students, residents, and scientists gathered in the mountains of Kentucky, Virginia, and West Virginia. They came to carry out door-to-door community health surveys in the hollars near mountaintop removal coal mines and in control communities further away. The evangelical organizations Restoring Eden and Christians for the Mountains arranged

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[24] For an exploration of Christian ethics and natural science, see Paul Scherz, *Science and Christian Ethics* (Cambridge: Cambridge University Press, 2018). In this otherwise excellent analysis, Scherz similarly focuses all the attention on the need for virtuous scientists amidst a set of social and structural relations that malform them. To be clear, I think virtuous scientists are necessary and essential to the flourishing of a society such as ours. I assume this to be the case and then turn to explore the social, political, and religious dimensions that might support or challenge the work of virtuous scientists.

the logistics and recruited the volunteers from their Christian college networks to spend their spring break in Appalachia. Residents and activists against mountaintop removal, like Bo Webb, whose wife died of lung cancer even though she never smoked, oriented the volunteers to their struggle against mountaintop removal and the unfolding health crisis. These activists told the student volunteers the data they collected would help them know if mountaintop removal was linked to their poor health. Michael trained the students to administer the health survey, walking them through Institutional Review Board certification, coaching them on informed consent procedures, and teaching them to track GPS coordinates for participating households while keeping the data anonymous. The religious organizers led the group in reading the Bible, reflecting on their experiences each night, worshipping God on mountaintops, and praying that students' hearts would be opened to God, God's majesty in the mountains, and the neighbors whose doors they would knock on.

These groups came together for very different reasons. Michael had heard residents' hypothesis and wanted to test it: Is proximity to mountaintop removal a factor in the community's poor health? Though he identified as "an atheist, probably," he saw benefits in partnering with evangelicals. Given the strong religious identity of Appalachian coalfield communities, he thought participation rates would increase if volunteers introduced themselves at the door as Christian college students. They also struck him as dependable and honest. And it didn't hurt that they paid their own way, especially given the paucity of agencies willing to fund what would have been an expensive study with the potential to hurt the coal industry; he never could have collected household-level data without the volunteers and the religious groups who organized them. Christians for the Mountains, the local organizing partner, wanted research that they could use to protect God's creation from mountaintop removal and gain support for that work from evangelicals across the country. Peter hoped that before he died of cancer he could help young

Christians have “aha moments”—epiphanies—wherein they might embrace their own calling to care for God’s creatures. Among the student volunteers, some wanted to spend spring break doing something meaningful with their friends; some were excited to see West Virginia while also fulfilling their biblical call to love their neighbors as themselves; others were looking for field research experience; and still others needed to fulfill a service requirement for their degree. Regardless of their different motivations, they developed a common concern for coalfield residents and a commitment to citizen science as a way to act on that concern.

After the hypothesis was generated, the research project designed, the volunteers organized, and the data collected, Michael’s team took over. They analyzed the data, controlling for behavioral and economic indicators, mapped it in relation to mountaintop removal sites, and published the group’s findings in peer-reviewed health journals. By giving a more granular picture of the association between poor health and proximity to mining sites, the studies bolstered Michael’s earlier analyses of publicly available data that indicated higher rates of cancer and birth defects among residents living near mountaintop removal sites. By 2016, the projects resulted in four peer-reviewed articles based on data from West Virginia, Virginia, and Kentucky, the findings of which were then incorporated into environmental health scholarship networks and cited in further studies in journals around the world.

Once published, the findings entered a new stage when various groups used them to contest mountaintop removal mining practices. At the local level, the findings were used by activists, journalists, lawyers, and politicians to contest mountaintop removal’s social license in the media, courts, and regulatory and legislative bodies. At the federal level, they were used in the twilight of the Obama Administration in support of the Stream Protection Rule, which was then the very first rule to be revoked by the new Republican-controlled Congress in 2017. The findings also formed the empirical basis of the Appalachian Community Health Emergency Act,

spearheaded by Bo Webb and now gaining sponsors in Congress, which would halt mountaintop removal until its costs to human health can be fully assessed. Both pieces of legislation aimed to curb mountaintop removal because of its ecological and community health impacts.

The coal industry and their allies attacked Michael's studies in general and the Restoring Eden studies in particular. They sought to discredit the research in the media, courts, and Congress. They also funded an institute based at Virginia Tech with $15 million that produced research arguing that mountaintop removal was safe, or at least safe enough to continue. Though the institute's research never disproved mountaintop removal's deleterious impacts, it claimed that results were inconclusive and cautioned that more research would be necessary before any actions could be taken to limit the practice. Faced with an intense dispute between different scientific accounts of the human costs of mountaintop removal, the federal government commissioned a panel of scientists and supplied them with $1 million to review the different scientific findings and draft a report recommending which of the studies should guide regulatory and policy deliberations. After it became clear to those on the inside that the panel would vindicate Michael's conclusions, the panel's funding was cut off and the panel itself dissolved by the Trump Administration in August 2017 before panelists could publish their final report.

A final stage in the story adds a cyclical dimension: Both Michael and Restoring Eden leveraged the early studies to produce further studies. Michael leveraged the early studies to successfully apply for a federal grant to expand and deepen the granular analysis begun in the door-to-door research. (He hired some of the previous Restoring Eden volunteers for that project.) Peter translated the studies' momentum and the volunteer recruitment networks he established with Christian colleges into additional volunteer-driven spring break citizen science projects, again in partnership with Michael. One of the studies was in Latino and African-American neighborhoods near petcoke piles in Chicago's South Side neighborhoods in 2015 and the other,

which remained incomplete at his death, was in the North Birmingham neighborhoods surrounded by two coal plants. The Chicago study resulted in another peer-reviewed publication in 2016.[25] Like the Appalachia studies, it also had an immediate impact at the local level—the petcoke piles were removed from the Chicago neighborhoods—as well as a wider impact on petcoke research and policy further afield.[26] Though the Birmingham study was never completed, it too became entangled in a conflict over the role of science in coal-related matters, especially as coal industry personnel and a politician were convicted of bribery in an effort that sought, in part, to prevent scientists from studying the health effects of coal pollution in North Birmingham.

My task is to account for this fuller version of the story that situates the scientists and the scientific knowledge they produced within a larger set of social, political, and religious dynamics.

One initial way to approach this comes from the field of science and technologies studies (STS). STS examines the social dimensions of scientific practices, institutions, and knowledges, especially the production, circulation, authorization, and use of scientific knowledge in contemporary societies. Latour, a leading figure in STS, argued in his influential account of modern societies that if one of the constitutive features of being modern entails separating science and politics from one another—the former engaged in representing "nature" and its objects and the latter "society" and its subjects—then we have never been modern.[27] His conclusion followed on his observation that what we moderns do in practice is much more complex than our idealized account of ourselves, for we coordinate, align, separate, and distinguish between science and politics, nature and culture, in strange ways. However, the modern ideal that he challenged

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[25] Michael Hendryx, Jennifer Entwhistle, Emily Kenny, and Peter Illyn, "Health status among urban residents living in proximity to petroleum coke storage: a first examination," *International Journal of Environmental Health Research* 26, no. 5-6 (2016): 497-507.

[26] See, for example, the Canadian government's use of the research in Santé Canada, *Ébauche d'évaluation préalable - Groupe des cokes de pétrole* (Government of Canada, September 2020).

[27] Bruno Latour, *We Have Never Been Modern*, trans. Catherine Porter (Cambridge, MA: Harvard University Press, 1993).

remains a powerful, normative ideal in our modern "knowledge societies."[28] Sociologists Fernando Domínguez Rubio and Patrick Baert describe the modern ideal that Latour and STS scholars critique as "the liberal view" of relations between politics and knowledge:

> The central tenet of this liberal view is that knowledge and politics are, and must be kept as, separate activities. … While politics should concern itself with the sphere of values—with how the world *ought* to be—knowledge should be exclusively concerned with the sphere of facts—with how the world *is*. Knowledge, it follows, should be regarded as a mirror that passively registers, without interfering, the essential features and causal relations already existing in the world. To put it differently, knowledge is, and ought to be, value-free, objective and, therefore, apolitical. Any knowledge interfered with or tinged by politics ceases to be knowledge, and becomes mere ideology—a value-ridden representation of the world. Politics, on the other hand, should place an equal emphasis on curtailing the spectre of technocracy that constantly threatens to reduce free political debate to the tyrannical rule of experts. The only legitimate interaction between knowledge and politics is, according to this liberal view, that by which knowledge provides the means for achieving effectively and efficiently the goals democratically set in the political sphere.[29]

Domínguez Rubio and Baert go on to state that even when the proponents of the liberal view accept its impossibility in practice, "they nonetheless postulate that knowledge production should *strive* to be as free as conceivably possible from any political interference that could taint the ideals of objectivity and universality" and that political debate should approximate as much as possible what Jurgen Habermas called an "ideal speech situation."[30] The rest of their chapter, and the volume to which it serves as an introduction, presents evidence of the liberal view's failure to describe social phenomena and proposes replacing it with something akin to Sheila Jasanoff's theory that there is a "co-production of science and society" (more on this below).[31] This is

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[28] Domínguez Rubio and Baert, "The *Politics of Knowledge*," 1.

[29] Ibid., 2 (emphasis original).

[30] Ibid (emphasis original).

[31] See Sheila Jasanoff, "The Idiom of Co-Production" and "Ordering Knowledge, Ordering Society," in *States of Knowledge: The Co-Production of Science and Social Order*, ed. Sheila Jasanoff (New York: Routledge, 2004).

because "knowledge has today become a source of questions that need to be politically answered, rather than just a means to answer political questions."[32]

Even though Michael articulated some features of this liberal view, such as its ideal account of objectivity, the fuller story of the Restoring Eden studies suggests something different. With respect to the failure of the liberal view to explain my case, it is sufficient to note both that science was how some groups gained political power against their opponents and that political actors intervened to resolve a conflict of scientific descriptions.

Peter implicitly recognized the need for a better account when he conceptualized "citizen science" using the metaphor of a zipper. Like a zipper, there are two sides of teeth—the "citizen" teeth on one side and the "science" teeth on the other—that need to remain separate even as they are zipped together in citizen science.[33] Each of the individual teeth is a specific phase that involves action either by citizens or scientists. Between them is a "firewall" that safeguards both the need for scientists to follow the standards and expectations set by their scientific community, and the desire of citizens to use the science to change existing social practices, structures, and institutions. Peter identified seven such teeth that need to be zipped together:

1. Citizen: community generates a hypothesis (e.g. we are getting sick because we live near these coal plants)
2. Science: researchers design a study to test the hypothesis (e.g. comparing health data from the impact community with data from a control community with similar demographics but not near a coal plant)
3. Citizen: community works to prepare residents for the study (e.g. nonprofit organizations, community organizations, and churches build relationships and

[32] Dominguez Rubio and Baert, "The *Politics of Knowledge*," 3.
[33] Fieldnotes, 10/2/18; 10/3/18; 10/8/18.

raise awareness among neighbors about the study and encourage them to participate)

4. Science: volunteer researchers meet established standards of research and collect data (e.g. the data gatherers receive training approved by an Institutional Review Board, use cohort sampling, track participating households with GPS)
5. Citizen: community offers their private health information for a greater good (e.g. household participation in the study is itself a form of agency in which households are not passive containers of data but agents who offer the information that constitutes the study)
6. Science: researchers do analysis and publication (e.g. data analysis, reporting, and publication in an academic journal)
7. Citizen: community can moralize and act on findings (e.g. Can you believe we're sicker over here by these coal plants than those people over there?! This is not okay! It is wrong and needs to change!)

In Peter's zipper metaphor, the challenge for citizen science organizers is to figure out how to pull together elements that, in our society, are not supposed to mix, yet which need to be coordinated if we are to support just causes against unjust ones. In our society, Peter expects that powerful interests will attack the science as biased, even though they already often coordinate science with social practices and institutions for their own purposes. In the zipper metaphor, the scientific and social aspects thus come together but do not mix. With a firewall between the two, scientific integrity and authority is maintained and communities get a new tool in their toolbelt. In a document Peter created to synthesize his vision of citizen science, he put it this way: "We go

where communities are already actively fighting vampires, but only with pitchforks. But if we can help them get swords, then they're better equipped."[34]

With regard to understanding the Restoring Eden projects, Jasanoff's non-reductive, co-productionist account of science and society is a more promising alternative to the liberal view. It does not reduce science to either a mirror of nature or a mere epiphenomenon of social and political interests. In other words, the model gives primacy neither to nature nor society; neither is held to determine the other.[35] Rather, in Jasanoff's view, "we gain explanatory power by thinking of natural and social orders as being produced together" in a theory of co-production. "Briefly stated, co-production is shorthand for the proposition that the ways in which we know and represent the world (both nature and society) are inescapable from the ways in which we choose to live in it."[36]

Jasanoff's way of examining mutually constitutive relations between science and politics explains some aspects of the citizen science projects. For instance, the projects were both the product of and fuel for efforts to create more just political ecologies in Appalachia and Birmingham; a community of shared concern formed around the projects; the published studies—as well as the industry-funded science—entered into and reconfigured public policy debates and partisan relations between Democrats and Republicans in Congress; they became the subject of a Freedom of Information Act lawsuit used to intimidate and silence Michael and those who might be inspired by his work; and they also became the object of dispute in a lawsuit over a new

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[34] Peter Illyn, *Citizen Science Principles* (unpublished).

[35] Sheila Jasanoff, "Ordering Knowledge, Ordering Society," in *States of Knowledge: The Co-Production of Science and Social Order*, ed. Sheila Jasanoff (New York: Routledge, 2004), 20.

[36] Sheila Jasanoff, "The Idiom of Co-Production," in *States of Knowledge: The Co-Production of Science and Social Order*, ed. Sheila Jasanoff (New York: Routledge, 2004), 2.

mountaintop removal mining permit.[37] In this way, the science was both a product of and productive of social relations. In a co-productionist idiom, "nature" was produced—in this case, the nature of the association between health and fossil fuels—together with the social relations that formed around and in response to the studies: people were sued, Congressional hearings called, common norms developed between atheist scientists and conservative religious groups, a research institute created, and an ACHE Act advocacy network formed.

Jasanoff's empirically informed co-productionist account of science and society nevertheless overlooks the third element that I have examined throughout this study, that is, sacrifice. In the last chapter, I argued that the theme of sacrifice is best understood as part of a larger priestly framework for understanding what is true of (Trinitarian, Christological) reality and the vocation of the human. I had argued earlier that the places where the health studies were carried out are best understood as sacrifice zones, as sites of tension and conflict between rival political ecologies of sacrifice—one characterized by extractivism's false sacrifice of lives and lands so that some might control the future and thereby sustain their blessing and another characterized by bearing priestly witness to Jesus Christ's once-for-all sacrifice to re-member those creatures that are dis-membered by regimes of false sacrifice.

I argue that science is caught up in the rivalry. In other words, it is not neutral. Scientific practices, institutions, and knowledges are not only caught up within institutions and social systems, practices, processes, and asymmetries of power; they are also caught up within and constituted by tensions and conflicts between rival political ecologies of sacrifice that vie with one another over claims to rightful membership in the community of life. In order to accurately describe the citizen science projects I examine in this study, I therefore need to revise Jasanoff's

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[37] Ohio Valley Envtl. Coalition, Inc. v. United States Army Corps of Eng'rs, United States District Court for the Southern District of West Virginia, Huntington Division, No. 3:11-0149 (January 23, 2012), [h…w].wvsd.uscourts.gov/sites/default/files/opinions/311-cv-00149.pdf.

theory that science and society are co-produced: science and society are co-produced within a context of rivalry over the meaning and practices of life and death, that is, over sacrificial logics.[38] In other words, sacrifice is the intermediary logic through which science and society are constituted.

This is why I think Peter's zipper metaphor is an improvement on Jasanoff's co-productionist theory. In his formulation, the "citizen" aspect of citizen science has to do not primarily with the question of whether the data collectors are formally trained or not but with challenging a co-production of science and society that has made peace with dis-membering human and otherkind creatures from the community of life. "Citizenship," in other words, is less a marker of the lay-professional distinction in science than it is a marker of who belongs in the community of life. Recalling Peter's image of the vampires and pitchforks, it could be said that if industrial science supplies the coal industry with sharper teeth with which to more easily live off the blood of the people, then citizen science empowers the victims with more effective defenses. In other words, there is no "science" full stop; instead, there is science that constitutes and is constituted by its relation to vampires and victims.

What does this theory of mutually constitutive relations between science, society, and sacrifice suggest for how we might evaluate Michael's TED Talk? Remember that he placed the burden of a just political ecology on the shoulders of patient, objective scientists who value integrity above money, career, and political ideology. In his view, the primary agents of a just political ecology are virtuous scientists, modest witnesses. Yet, as I have shown, the fuller story of the household health studies, including their social and political impact, depended on a much

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[38] Stating what I think is the same thing in different words, one could say that nature, culture, and grace need to be theorized and examined together. This second version of the formulation connotes a coming together of multiple existing forms of analysis: nature and grace and culture and grace (both examined by theologians), on the one hand, and nature and culture (as examined by critical nature-society studies, such as cultural anthropology, political ecology, and science studies), on the other.

wider set of social practices, virtues, and commitments. The virtuous scientist's integrity and steadfast commitment to data was one essential aspect of a wider set of relations and practices. Some of the most causally significant of these relations and practices were religious in nature. For instance, for Restoring Eden, Christians for the Mountains, and the college students who volunteered their time and effort, those social practices, virtues, and commitments were deeply theological: They had to do with loving and defending God's creation, including those human creatures the Gospel of Luke identifies as one's "neighbors." Stated in terms of my analysis of sacrifice, they had to do with bearing witness to the meaning sacrificed peoples and places have by virtue of their participation in God's economy of creation and salvation; in that economy, the suffering one invisibilized by even the religious leaders is the neighbor to be loved. In addition to making visible in numbers, charts, and graphs coal's human costs through empirical research, the studies were also intended to make visible the love of an invisible God for all creation, especially for the creatures that our extractivist economy separates for sacrifice—and naturalizes and invisibilizes their suffering—so that the rest of us might sustain our own lives and lands. In short, an atheist scientist, religiously diverse residents and activists, evangelical creation care leaders, and Christian college students engaged in scientific practices that bore priestly witness to one ecology of sacrifice by resisting another. In the case of the health studies, science was constituted, in part, by its relation to rival political ecologies of sacrifice.

II. Science, Secularism, and Sacrifice Zones

Even if my theorizing of this case of conflict between citizen science and industrial science in terms of rival political ecologies of sacrifice is convincing, I have not yet given reason to affirm that similar dynamics are at work in environmental knowledge production more broadly. My task in this section is to give an account of why I think my theory—that science and society are

mediated and constituted by sacrifice—applies not only to the case of the health studies but to a wider set of social and environmental relations in general. To address this wider set of issues, I return to the extractivist political ecology that I explored in earlier chapters. There, I argued that extractivist political ecologies, such as those that transform parts of Appalachia and Birmingham into sacrifice zones, are constituted by false sacrifices. By false sacrifices, I mean the dis-membering of creatures from the community of life in the name of a greater good, particularly the good of controlling or sustaining the future of one's own life and land. If my theory of the constitutive relations between science, society, and sacrifice is to be extended beyond my case to understand relations between science, politics, and religion more broadly, then I need to examine science's relationship with extractivist political ecologies beyond the particular sacrifice zones where Restoring Eden organized their citizen science projects. One entailment of my argument that science is caught up in rival political ecologies of sacrifice is that science has historically participated in, and continues to participate in, falsely sacrificing the world; modern science—and here I mean some science, certainly not all science—made peace with a world littered with sacrifice zones. More starkly, science often aided and abetted the making of extractivism's sacrifice zones.

To substantiate this claim I use my case as a lens through which to critically examine a widely held, secularist conception of the secular understood in terms of neutrality, that is, as a time, space, and/or knowledge that is neutral with respect to religious matters. In what follows, I argue that the modern sciences have aided and abetted secularism when scientists (or those who advocate that in public matters we should simply "follow the science") have treated scientific knowledge as neutral knowledge. Though cloaked in neutrality, science nevertheless participated in the secularization of nature, that is, the disenchantment of the earth and the transformation of nature into an extraction zone. If my argument is convincing—that science is not neutral, but is

instead caught up in rival political ecologies of sacrifice—then there is no basis for uncritical appeals to "science" and "experts" to resolve pressing public issues, particularly environmental issues. In other words, no appeal to science successfully evades matters of meaning, morality, and ontology. Rather, we should expect to find scientists and experts on all sides of pressing environmental issues, developing research agendas, seeking funding, asking research questions, selecting methods, interpreting data, distributing findings, translating them to the public, and suggesting their implications for public matters in radically different ways. In fact, I think this is exactly what we find.

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Maria Gunnoe was sure that "God put the coal there [underground] because he knew it was so nasty, he knew it needed to be buried."[39] Descended from a long line of Appalachians, Gunnoe became an activist against mountaintop removal after witnessing a series of floods that devastated her family's land and that of her neighbors. The floods started coming after coal companies began practicing mountaintop removal mining in her region of West Virginia. Whether or not she had a pile of scientific articles to prove it, she knew what caused the floods. And after she began to speak out against mountaintop removal, becoming a spokesperson for the groups Christians for the Mountains and the Ohio Valley Environmental Coalition, she knew who it was who murdered her dog, harassed her kids, put sand in her gas tank, and ran her off the road. She also knew it was wrong when her son was taught in school that "surface mining leaves the land in better than before condition." In effect, she said, "That's my son's school teaching him that surface mining does a better job than God." But she knew otherwise. "I'm going to quote a Bible scripture,

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[39] Quoted in Dwight B. Billings and Will Samson, "Evangelical Christians and the Environment: 'Christians for the Mountains' and the Appalachian Movement against Mountaintop Removal Coal Mining," *Worldviews* 16 (2012): 17.

Revelation 11:18," she said. "'For those that destroy the earth will be destroyed.' That's cut and dried right there. Which side you stand on."[40]

Gunnoe reflected a sentiment shared by other organizers of the Restoring Eden projects. They, too, knew mountaintop removal was wrong long before they ever looked at (or produced) the science. The science was their response to a prior kind of knowledge about the mountains as wrapped up in a story about God's creating and redeeming the world. The science swam in a sea of firsthand experience and divine revelation.

But in Appalachia, there was another knowledge that science and technology swam in. Bill Raney, president of the West Virginia Coal Association, expressed it best when he said about mountaintop removal that if "you look at our industry and what we have accomplished here for the world [we have been] extracting mineral out of the ground that the good Lord put in these mountains for us to take advantage of."[41] A striking adaptation of the Genesis narrative posted on his organization's official website echoed the same sentiment: "God said, 'I've placed more coal in West Virginia than almost anywhere else in the world. So I need a hard worker.' … So God made a coal miner."[42] Similarly, shortly after Pope Francis released his encyclical *Laudato Si*, Raney invited the confused pope to West Virginia to witness how the coal industry was "fulfilling our responsibility as stewards of our Earth's resources." In Appalachia, he argued, the pope could learn from coal miners, "the greatest practicing environmentalists in the world."[43] But when the West Virginia Council of Churches presented Raney with religious reasons for improving

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[40] Ibid., 17.

[41] Quoted in Catherine Pancake, *Black Diamonds: Mountaintop Removal and the Fight for Coalfield Justice* (Oley, PA: Bullfrog Films, 2006), documentary film.

[42] "God Made a Coal Miner (WV Edition)," The Coal Seam, last modified September 7, 2013, accessed January 14, 2021, [h…]://wvcoalassociation.wordpress.com/2013/09/07/god-made-a-coal-miner-wv-edition/.

[43] Bill Raney, "Pope Francis Should Visit WV Coalfields," *West Virginia Gazette-Mail*, June 19, 2015, [h…w].wvgazettemail.com/opinion/bill-raney-pope-francis-should-visit-wv-coal-elds/article_19e7b293-72ec-587e-a56b-27c3cdcc290c.html.

environmental stewardship in Appalachia, he backtracked: "Mixing natural resource extraction and religion is inappropriate and only serves to expand what already is a divisive issue." However, this concern about mixing religious and industrial knowledges did not prevent him from asserting, in the very same interview, that "the Lord placed the minerals in the mountains and we need to utilize them."[44] There is no evidence suggesting he noticed the irony.

Though it is rarely stated in such explicitly theological terms, Raney nevertheless articulated a widely held belief that if the earth is a storehouse of resources to be used for human advancement, then science and technology are helpful tools to properly access and use them. Science, in other words, aids your task; it allows you to see a mountain for what valuable goods God (or Nature or some physical process) placed within it, and technology allows you to access those goods.

I juxtapose these knowledges of Gunnoe and Raney because both individuals explicitly identify God as the creator of West Virginia's mountains who invests them with purpose in a larger story. In Raney's case, a mountain is like the paper wrapped around a Christmas gift: It temporarily covers God's gifts to humanity, and its divinely instilled purpose is fulfilled when the human tears it open. In Gunnoe's case, a mountain is something God made to protect humanity from what might be unleashed by tearing it open; our human task is to protect it from destruction. In both cases, science—scientific practices, institutions, and knowledges—is to be assessed by the degree to which it reflects or challenges these competing understandings of an Appalachian mountain and the carbonaceous matter it contains. Science was and is used to both produce and contest Appalachia's sacrifice zones.

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[44] Associated Press, "W.Va. churches seek peace, prayer in coalfields," *Herald-Dispatch*, September 14, 2008, [h…w].herald-dispatch.com/news/w-va-churches-seek-peace-prayer-in-coalfields/article_600267bc-d794-5ba8-8bca-d772203b12dc.html.

Yet, this case suggests something even deeper: Science was also wrapped into conflicts over the meaning and status of matter. The anthropologist Mario Blaser called these "ontological conflicts." "Ontological conflicts," according to Blaser, "involve conflicting stories about 'what is there' and how they [the stories] constitute realities in power-charged fields."[45] The science is caught up in and constituted by the ontological conflicts I have identified as rival ecologies of sacrifice. Insofar as science describes "what is there," it is not neutral; it takes sides in ontological conflicts.

Having examined the kind of view represented by Gunnoe throughout this study—the view that a mountain is part of God's creation deserving protection—my focus here is Raney's view insofar as it represents a more widely held conception of nature—of "what is there"—as a storehouse of natural resources teleologically ordered toward human projects. Though Raney provides a theological justification for mountaintop removal loosely inspired by biblical categories, the ontology he articulates accommodates many different accounts of how coal was deposited in the Appalachian mountains, whether by God, Nature, or some geological process. In this sense, an extractivist ontology is remarkably open to various religious and non-religious conceptualities; people from different religious and non-religious commitments have shared its basic features in common. My point is that Raney is not unique. His relationship to the Appalachian mountains represents extractivism's political ecology.

What role did science play in aiding and abetting Raney's extractivist relationship to the mountains? Did science play a role in training Raney to come to peace with the sacrifice of Appalachia?

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[45] Mario Blaser, "Ontological Conflicts and the Stories of Peoples in Spite of Europe: Toward a Conversation on Political Ontology," *Current Anthropology* 54, no. 5 (October 2013): 548.

A comprehensive answer would require a larger study of the relations between science and coal extraction in history. For instance, the fields of statistics, demography, epidemiology, public health, chemistry, civil engineering, mechanical engineering, resource geography, and resource economics either originated or underwent periods of rapid development in order to extract, move, burn, or protect people from the effects of coal.[46] Robert Boyle, the great architect of modern experimental science, is a telling example. His influential experimentation with vacuums was specifically oriented toward the production of pumps that could be used to drain water from coal mines so miners could go deeper into the earth in search of coal. He and his fellow experimentalist natural philosophers, the agents of a scientific "revolution," laid the epistemic foundation for the coal-fueled industrial revolution that followed. Initially powered by muscle, these pumps would later be powered by coal itself through the series of steam engines that were invented to drain mines and increase coal production to feed the factories, which were also powered by coal-fired steam engines. Greater supplies of coal also created demand for new forms of knowledge about how to transport it to markets, eventually resulting in new knowledges and arts for constructing canals and railroads (for coal-fired engines). And with more people burning coal, first for heat and then for industry, cities grew both denser (in a way that reflected their denser energy source) and foggier, leading to further problems in need of new forms of knowledge with which to address them.[47] When atmospheric conditions were right, some fogs were so thick in cities like London that hundreds of people would die in a single day, many by smoke inhalation, some by getting run over or falling into the fog-obscured Thames. The fields of statistics and epidemiology grew out of cataloguing these deaths, in part to try to let the

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[46] See, for example, the work of Barbara Freese, *Coal: A Human History* (New York: Basic Books, [2003] 2016).

[47] Freese names the dynamic well: "The patterns were the same: Coal created a problem, then helped power a solution, and that solution would have revolutionary consequences far beyond the coal industry." Freese, *Coal*, 91.

aristocracy know when to leave town in search of more livable, breathable air. These are just a few examples of how coal and modern science developed together.

It should be noted, as well, that if these scientific fields of knowledge can be said to have made things like vacuums visible, this period also saw the development of techniques for keeping some things invisible, such as the suffering of workers and other costs of industrialization. For example, in her human history of coal, Barbara Freese noted not only the new and horrifying ways miners died in search of coal in England; she also showed how early mine owners and journalists concealed the human costs of coal mining. When fiery methane explosions, deadly carbon monoxide clouds, and other catastrophes became regular affairs, sometimes killing dozens of miners in an instant, mine owners put pressure on journalists to stop reporting on them for fear that it would affect morale among the miners and their families.[48]

Though a full history of the mutual development of coal and modern science is beyond this study, a brief history of coal's relation to geology can stand in for and represent wider dynamics. Drawing on historians of geology, I will give an account of how the coal-oriented field of geology played a unique role in transforming Appalachia into a patchwork of sacrifice zones. Geological science has allowed the agents of industry, like Bill Raney, to literally see a mountain for what lies within it. Geology offers visualization technologies for seeing and entering the earth to carry out projects to provision human economies with useful resources. I focus on the science of geology both because it is the science that makes the underworld visible and because geologists were the avant-garde of American science. Geology grants extractive enterprises the

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[48] "In certain regions, catastrophic mine explosions became so commonplace that mine owners asked local newspapers not to report on them. The *Newcastle Journal* announced with stunning candor in 1767 that these fiery catastrophes were more common than ever, but 'as we have been requested to take no particular notice of these things, which, in fact, could have very little good tendency, we drop the further mentioning of it.' Newspapers avoided disturbing their readership by mentioning the ongoing deadly explosions for the next several decades. The public, already complacent over the hardships faced by coal miners, now had even less reason to think about them." Ibid., 51-52.

ability to find valuable minerals to fuel projects in historical progress, nation-building, and economic development. To discern what meaning to derive from the way science and religion come into conflict in coal's sacrifice zones, I go back to the moment in early nineteenth-century England when the study of the earth became the science of geology. This moment marked a two-fold shift: (1) in the concerns driving the study of the earth from cosmological questions to practical and industrial ones, and (2) from amateur investigation to the professionalization of geological science. One unlikely man discovered the "master principle" that founded geological science—the principle of faunal succession. His name was William Smith, and, according to one biographer, his 1815 geological map of England "changed the world."[49]

A. Geology's Master Principle

In 1831, Rev. Adam Sedgwick, President of the London Geological Society, publicly recognized the self-educated, lower-class surveyor and canal builder William Smith for having discovered "the master principle of our science," the principle of faunal succession.[50] Its simplicity belies its power: Different geological strata can be identified by their fossil content; the less complex the fossils, the older the strata; the more complex the fossils, the younger the strata.[51] With this principle, which he derived from observations made inside coal shafts and while building coal

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[49] Simon Winchester, *The Map That Changed the World: William Smith and the Birth of Modern Geology* (New York: HarperCollins, 2001).

[50] Charles Coulston Gillispie, *Genesis and Geology: A Study in the Relations of Scientific Thought, Natural Theology, and Social Opinion in Great Britain, 1790-1850* (Cambridge, MA: Harvard University Press, 1951), 84.

[51] Though in the popular imagination the aristocrat Charles Darwin is often celebrated for having discovered an evolutionary element in the fossil record, the lower-class Smith was already building positive theory on such a discovery decades before Darwin. Darwin simply adapted a theory of scarcity and competition from liberal political economy to explain a causal mechanism for these incremental changes in the fossil record.

canals, Smith made his world-changing 1815 geological map of England.[52] His principle and map together gave extractive enterprises, which were at that time furiously feeding the industrial revolution with raw materials, the ability to read the earth's vertically layered strata along great horizontal expanses. If strata could be identified by their fossil contents, and if layers of coal and other valuable minerals were predictably located between *x* and *y* strata, then great profits lay in store, especially for the beneficiaries of England's enclosure movement. This capacity to see inside the earth bestowed the power to predict where lucrative holes could be dug on private estates and valuable materials extracted, coal chief among them.[53] Sedgwick's praise of Smith coincided with the consolidation of English geology as a scientific profession against the amateurs who studied the earth for its cosmological meaning.[54]

While Smith and the newly professionalized geologists after him thought geological science should be oriented by industry, not by amateur concerns about cosmology, this has not prevented them from being mythologized as part of a great tale about how Science saved humanity from Religion.[55] Early geological scientists agreed that geology should be a practical

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[52] Winchester, *The Map That Changed the World*.

[53] Smith echoed many contemporaries when he added a little natural theology to the memoir he published with his map. In his estimation, his discovery was evidence of a law-governed creation rendered knowable by science and usable by industry. The patterned arrangement of fossils in the rocks, he wrote, "must readily convince every scientific or discerning person, that the earth is formed as well as governed, like the other works of its great Creator, according to regular and immutable laws, which are discoverable by human industry and observation, and which form a legitimate and most important object of science." William Smith, *A Memoir to the Map and Delineation of Strata of England and Wales* (London: John Cary, 1815).

[54] James R. Moore, "Geologists and Interpreters of Genesis in the Nineteenth Century," in *God and Nature: Historical Essays on the Encounter between Christianity and Science*, eds. David C. Lindberg and Ronald L. Numbers (Berkeley, CA: University of California Press, 1986), 322-350.

[55] When I refer to "Science" with a capital "S," it refers to an ideology and mythos, not the scientific practices, institutions, and knowledges I refer to as "science." Similarly, "Religion" refers to the darkness from which Science saves human civilization; it is Science's other. Regarding Smith's practical, industrial orientation, historian Jason Moore wrote, "in [Smith's] view, the function of science was simply to facilitate … concrete results." Its purpose was "primarily to promote manufacturing by discovering the most profitable utilization of natural resources. Only so could England increase her material and

science, not one driven by religious or anti-religious agendas to prove or disprove the biblical text.[56] However, some contemporary historians, like Simon Winchester, see them as the protagonists of a story about how science-driven, natural resource-derived wealth is humanity's savior from religious dogma.[57] Though I agree with historians of science who have largely deconstructed the idea that there was a conflict between Religion and Science at this time, I think Winchester accurately, if unwittingly, wove Smith into a story of conflicting ontologies: one that read the earth as a normative signifier and another that read it as a storehouse of natural resources ordered toward human projects.

B. Ontological Conflicts, Temporal and Spatial

Historians of science have shown that the decades between Smith's principle and geology's consolidation as a professional science were marked by a two-fold shift. On one side was a change in the concerns driving geological research: from cosmological questions about human and earth origins and their social meaning to practical, industrial questions about locating mineral

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commercial wealth and maintain her hard-won preeminence among the nations." Moore, "Geologists and Interpreters of Genesis," 91-92.

[56] The key object of these religious and anti-religious debates was the Genesis flood.

[57] Simon Winchester mythologized William Smith and his map when he wrote, "It is a map that heralded the beginnings of a whole new science. It is a document that laid the groundwork for the making of great fortunes—in oil, in iron, in coal, and in other countries in diamonds, tin, platinum, and silver—that were won by explorers who used such maps. It is a map that laid the foundations of a field of study that culminated in the work of Charles Darwin. It is a map whose making signified the beginnings of an era not yet over, that has been marked ever since by the excitement and astonishment of scientific discoveries that allowed human beings to start at last to stagger out from the fogs of religious dogma, and to come to understand something certain about their own origins—and those of the planet they inhabit. It is a map that had an importance, symbolic and real, for the development of one of the great fundamental fields of study—geology—which, arguably like physics and mathematics, is a field of learning and endeavor that underpins all knowledge, all understanding." Winchester thus wrote Smith into a story about how scientific advances and natural resource-derived wealth fuel progress (including, evidently, global resource colonization), which he portrayed as a kind of salvation from Religion. Winchester, *The Map That Changed the World*, xvi.

deposits. On the other was the development of a politically potent distinction between amateur and professional geologists. Historians Martin Rudwick and James Moore argue that these shifts were intertwined: Those who asked cosmological questions of earth studies were delegitimized as amateurs by the emerging class of professional scientists, both religious and anti-religious, who excluded such questions from an empirical, practical science practiced by those with specialized instruments, training, methods, knowledge, and networks.

I want to suggest that a third shift was greatly accelerated by these other two: an ontological shift in the status and meaning of matter—a shift in "what is there." While geologists may have excluded cosmological questions about the religious, moral, and political significance of temporal matters—that is, origins—they nevertheless seem to have agreed that matter was there to be resourcified. While many scholars have examined the conflicts, compromises, and complexities characterizing the relationship between religion and geological science, what most interests me is this matter of consensus. Regardless of their points of dissent and disagreement, historical debates over the expanse and meaning of time, and subsequent scholarship on these debates, all seem to have taken for granted the spatial, ontological transformation geology greatly aided and abetted. As Winchester uncritically recognized in his mythologization of Smith's map, geological science developed in tandem with an enormous shift in spatial understandings of and political-economic relations to the earth: from the earth as a normative signifier—creation—to the earth as a storehouse of resources to be located, extracted, used, and wasted to advance "humanity" or "civilization" (as represented by some vanguard).

Maintaining cosmological neutrality, the first geological "scientists," in contrast to the natural philosophers and theologians who studied the earth, were composed of Christians, freethinkers, agnostics, and atheists who cooperated amicably based on "a pragmatic alliance"

that, according to Rudwick, "valued geology … for its potential practical utility."[58] By excluding the idea that empirical science should engage questions of cosmological meaning (regarding origins), geological science unified itself as a scientific discipline around a utilitarian, industrial vision to promote natural resource extraction and feed commerce. In other words, the developing science of geology aided and abetted a particular way of seeing and relating to the earth.[59] To the question, "What is there?" geologists replied, "coal, tin, wealth, industry, and, ultimately, advancement."

I build on Rudwick's observation that geology was consolidated as an empirical science around its practical task by suggesting that the conflict deserving more attention is not between Science and Religion but between different ways of coordinating and aligning them for or against this extractive relation to the earth. The religious geologists who agreed to study the earth independent of cosmological matters fully cooperated with agnostic and anti-religious professional geologists in making the earth visible as a storehouse of resources slated for extraction. In short, the science was unified by an extractivist ontology and ethics. On the other hand, those who coordinated and aligned their study of the earth with their religious or anti-religious concerns rightly recognized that scientific developments are inescapably political and religious. The era's "scriptural geologists," also known as "Mosaic geologists," studied the earth at that time for how it might signify the normative order spoken of in the Genesis creation account. The anti-religious inverted this; they used geology to disprove the Genesis flood and, by

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[58] Martin Rudwick, "The Shape and Meaning of Earth History," in *God and Nature: Historical Essays on the Encounter between Christianity and Science*, eds. David C. Lindberg and Ronald L. Numbers (Berkeley, CA: University of California Press, 1986), 313-14.

[59] I should specify that I say "aided and abetted" because I do not think it is accurate to say that geology invented an extractive relation to the earth. An exploration into the origins of an extractive imagination would go back at least to the humanist and mineralogist Georgius Agricola in sixteenth-century Saxony, perhaps even earlier. See, for example, Orlando Bentancor's argument that the Salamanca School's version of Thomism consolidated the instrumentalist metaphysic undergirding the development of extractivism in the Americas in Orlando Bentancor, *The Matter of Empire: Metaphysics and Mining in Colonial Peru* (Pittsburgh: University of Pittsburgh Press, 2017).

extension, religious authority in general. Both groups were excluded as amateurs by professional geologists for insisting that scientific inquiry engage its moral and religious dimensions. While I do not share their concerns or endorse their conclusions, I think these cosmologically minded inquirers nevertheless rightly recognized that scientific developments are never neutral; they have moral and religious dimensions that need to be debated, not excluded.

C. The Americanization of Science

This history of geology's consolidation as a science in England—consolidation around its master principle, practical orientation, exclusion of amateurs, and extractivist vision—directly relates to Appalachia's transformation into a patchwork of sacrifice zones. According to historian Paul Lucier, geologists set the trajectory for the development of the natural sciences in the U.S. They were the primary agents of the "Americanization" of science in the nineteenth century—Americanization referring to the triumph of the utilitarian, wealth-building motive hitching science to extractive endeavors.[60] Lucier argued that, in contrast to the older European ideal in which natural science was an aristocratic and civilizing project of intellectual pursuit, American scientists were preeminently practical, putting geology in service of nation-building and wealth creation. In the U.S., science, state-making, nation-building, and extractive capitalism developed in tandem. Lucier's study demonstrates that American geologists had more in common with Smith's practical vision than the theory-driven, aristocratic approach of a Charles Darwin.[61] Unlike the latter, they needed entrepreneurial skills to survive. So American geology developed through public and private resource surveys to assess newly Americanized lands and, through

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[60] Paul Lucier, *Scientists and Swindlers: Consulting on Coal and Oil in America, 1820-1890* (Baltimore: Johns Hopkins University Press, 2008), 313.

[61] Darwin, for instance, claimed to discover a mechanism of natural selection that challenged religious and moral wisdom.

their surveys, actually accelerate their Americanization. Geologists were consultants paid by private and state entities to answer practical questions about where to dig holes and how to classify what was in them: What mineral deposits do we have? Who should testify in legal disputes over them? Where can we find them? What can we do with them? In short, what is there?

Whether or not we should follow Lucier in calling this an Americanization of science—especially since this practical, extractivist spirit was already in formation among British geologists—this covenant between science, capitalism, and the state no doubt determined to a great extent the unfolding history of the coal industry in Appalachia.

This is no deterministic account, however; this covenant between science, capitalism, and the state was historical and should not be thought of as either static or unbreakable. In fact, my case study suggests that science's relations with capitalism and the state are more complex today than they were in the nineteenth century. It is historically accurate to say that geology did and still does aid and abet the extractive relations to the earth (and labor) that make Appalachia a patchwork of sacrifice zones. My case also shows that it is historically accurate to say that coal companies have used other natural and social sciences beyond geology to protect their social license. However, science is also now used to contest the political-economic relations that produce these sacrifice zones.

The citizen science projects reflect the modern environmental movement in pointing in this direction. Ever since Rachel Carson's *Silent Spring*, the covenant between science and industry has been under pressure even as science has become more entwined with the regulatory, managerial state. In addition to enabling extractive industries, science is often now an aid to environmental activism and management against industrial pollution. Seen from a different angle, however, citizen science projects, including but certainly not limited to the Restoring Eden

projects, are unique: They revive the old amateur spirit attacked by professional scientists as non-scientific. In the hands of the Restoring Eden project organizers, volunteers, and Appalachian residents, for instance, science was infused with moral and religious meaning. But their concern was not the origin of the earth, as is so often defined as the disconnect between Religion and Science; it was the ontological status of matter: What is there and how should we relate to it? Recall the different responses offered by Gunnoe, the resident-activist, and Raney, the coal association president. If scientific practices, knowledges, and institutions are implicated in making Appalachia a patchwork of sacrifice zones for our extractivist political ecology, then the citizen science projects invite us to consider what science can achieve when utilized for a different purpose, entirely, such as making Appalachia a sacred zone.

In light of these insights from historians of geology and my examination of the ontological shift that geology aided, I would thus revise Sedgwick's 1831 observation about geology's "master principle." Perhaps it was not so much William Smith's principle of faunal succession but, rather, the principle that unified professional geologists—religious and anti-religious—around an extractivist ontology and political economy. We might call this the principle of resourcification. The religious and anti-religious geologists used Smith's methodological principle to serve that master principle.[62] But my purpose here is not to condemn. It is to ask after the nature of the project that geological sciences and scientists have served, especially as geologists made their peace with sacrifice zones. Even as the costs concentrated in sacrifice zones are now more apparent than ever, many—perhaps most?—geologists still sell their knowledge to public and private extractive enterprises.[63] Many are still employed by extractive industries to

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[62] The allusion is to Matthew 6:24.

[63] According to the U.S. Bureau of Labor Statistics, there were 31,800 working geologists in 2019. The vast majority work in engineering, mining, and oil and gas extraction. Only a small percentage work in colleges, universities, and federal and state governments. By far, the best paid jobs in geology are in the

answer the question, What is there? And they are now asking and answering it far beyond the territories that captured the imaginations of earlier scientists in Britain and the U.S. They are increasingly taking their knowledge to the ocean floor and even into the outer reaches of space.[64]

My case study of science in Appalachia's sacrifice zones suggests that the ontological shift in the meaning of matter from normative signifier to storehouse of natural resources has lasting existential significance. For those living in coal's sacrifice zones, these are matters of life and death. If you inhabit a place that geologists have shown to be rich in mineral deposits, then there is a good chance that you, your neighbors, and the land that sustains you will be offered up as a sacrifice for some greater good, be it economic development, social progress, perhaps even sustainability.

D. Science and Secularism

The conclusion I draw from this review of historical scholarship on coal, geology, and religion in modern North Atlantic history is that science not only aided and abetted extractivist political ecologies, but it also came to peace with its participation in making the earth a patchwork of sacrifice zones. How should we conceptualize this kind of science that abets a sacrificial political ecology? Through engagement with science studies and secular studies, I suggest that this kind of science should be understood as part of a normative secularist project that cloaks its normativity in claims of neutrality. Insofar as science is imagined as a neutral outside, a realm free of human

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"Mining, quarrying, and oil and gas extraction" sector. "Geoscientists," in *Occupational Outlook Handbook* (U.S. Bureau of Labor Statistics, September 1, 2020), [h…w].bls.gov/ooh/life-physical-and-social-science/geoscientists.htm.

[64] For an examination of these dynamics by a scholar of Christian ethics, see William P. George, *Mining Morality: Prospecting for Ethics in a Wounded World* (New York: Lexington Books, 2019).

(cultural) difference, it participates in naturalizing and rationalizing extractivism's political ecologies of sacrifice.

First, Donna Haraway's concept of "visualization technologies" provides a way to tie together Smith's map, entrepreneurial scientists, and Raney's relationship to Appalachian mountains.[65] Haraway contended that, whatever the scientific discipline, scientists make objects visible. They use technologies, such as instruments and practices, to make things that are invisible to the untrained and technologically unaided eye visible. No great imagination is needed to see how this applies to geology; William Smith, for instance, used his principle like a technology to visibilize a pattern in England's subsoil. But there is more. As Haraway's concept was a critique of an idealized account of scientists as disinterested observers mirroring nature, she maintained that the things they make visible ought never be beyond dispute. Drawing out the relation between science, politics, and ethics, Haraway theorizes that the objects scientists make visible are always situated, partial, and formative: they are limited and contestable; they necessarily enable or challenge political orders; and they exert formative pressures back on those who make them visible.[66] Regarding the latter point, the objects scientists bring into view form our subjectivities and societies. This can be seen in the case of Smith's "master principle," which helped to make both the geological scientist and the Geological Society. But it formed other subjects, as well, such as Raney, the extractive subject who, by using geology, can see a mountain in Appalachia for what lies within it. Though extractive subjectivities undoubtedly pre-dated the map, geology's "master principle" empowered them by aiding their ability to discover hidden resources, dig lucrative holes, and move their extracted goods to market.

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[65] Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminist Studies* 14, no. 3 (1988): 589.

[66] Haraway's observations resonate with Pierre Hadot's argument about ancient philosophy, that it was a therapy of the soul, a set of spiritual practices to attune ways of seeing with ways of living.

This is why I conclude that geologists' visualization technologies aided and abetted an extractive relation to the earth. Though this is no condemnation of geology *per se*, it is certainly a critique of the ideology of neutrality through which geologists consolidated themselves into an exclusive, professional, scientific community. Geological science is, in this way—as I think any science is—caught up in conflicting political ecologies, making visible that which aids and abets some of these political ecologies against others.

How should we understand this ideology of neutrality? Luke Bretherton suggests the concept of the secular, particularly the project of secularism, be understood as a normative project that conceals its normativity under the cloak of neutrality. A secularist conception of the secular refers to times, spaces, and, I would add, knowledges that are neutral with respect to religion.[67] However, according to Bretherton, when we fail to recognize secularism as a normative project—when we narrate the decline or privatization of religion as simply part of the nature of things—then we fail to understand the actual relations between religion and politics today. "Secularism" is best understood as a mode of statecraft and a way of governing religion that normatively conceptualizes the secular as religiously neutral space. Though projected as neutral, it nevertheless norms projects that discipline religions across the globe, refashioning them as schools of liberal values through producing and protecting sacred-secular and private-public binaries. Secularism distinguishes between good and bad expressions of religion based on the degree to which they advance modern, liberal commitments. This is why Bretherton concludes that secularism attempts to evade or neutralize deep human difference. Rather than respond to human difference with efforts to develop the virtues of living amidst others (e.g. enemies, strangers, and the friendless), secularism responds by regulating and policing acceptable forms of human difference.

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[67] Bretherton, *Christ and the Common Life*, 227-257.

Vincent Lloyd concurs with Bretherton and extends the analysis to matters of race. Lloyd suggests that religion and race are disciplined by analogous appeals to a hegemonic outside realm that is imagined as unmarked and neutral. In this analogy, "Secularism … evokes a religious domain that is managed by power and that is circumscribed by nonreligious forces. The analogy for race: racial-minority communities are managed by power and circumscribed by nonminority, that is white, forces."[68] The neutral category, whether with respect to religion or identity, is raced, which is why he concludes that "whiteness is secular, and the secular is white." Stated otherwise, "The unmarked racial category and the unmarked religious category jointly mark their others. Or, put another way, the desire to stand outside religion and the desire to stand outside race are complementary delusions, for the seemingly outside is in fact the hegemonic."[69] In short, Lloyd argues that the ideology of neutrality functions to discipline and police expressions of humanness to the same degree that it does expressions of religion.

Though Lloyd does not specifically address scientific knowledge, the implications are clear: Insofar as science is imagined as a neutral outside, then it, too, participates in the management by power of religion and humanness. While projected as a neutral outside, it is, in reality, hegemonic.

Though Bretherton and Lloyd examined the political and social dimensions of secularism's ideology of neutrality, I am also examining here the way that these intersect with secularism's epistemic dimensions. Through its technologies of visualization, geology participated with many other branches of science in providing "neutral" descriptions of the world as a storehouse of natural (and human) resources to be extracted, managed, used, and wasted. My argument is that secularist sciences—practiced by both religious and anti-religious—have

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[68] Vincent Lloyd, "Introduction: Managing Race, Managing Religion," in *Race and Secularism in America*, eds. Jonathon S. Kahn and Vincent W. Lloyd (New York: Columbia University Press, 2016), 4-5.

[69] Ibid., 5.

rendered the world, including human and otherkind bodies, sacrificable when they pretended that the knowledges they produced were neutral. Supposedly "neutral" knowledges naturalized extractivism's sacrifices.

Recalling STS's critique of "the liberal view" of relations between knowledge and politics (or, science and society), I can now merge this with these critiques of secularism. Whether one has in view the relationship between knowledge and politics, religion and politics, or race and religion, the liberal view is a normative project that naturalizes its norms through an ideology of neutrality. If the distinction between the neutral and the non-neutral serves to socially distinguish appropriate from inappropriate religion, public from private space, unmarked from marked bodies, and so on, in the realm of knowledge, it serves to distinguish between facts and values, scientists and non-scientists, and nature and culture. Those with specialized instruments, training, memberships, and modes of analysis are able to access both elements in each of these pairs, while the rest of us, who lack in these areas, can only access the second set of elements in each pair.

Stated in this way, it should be obvious why many historians and theorists of science have portrayed modern scientists as a clerical class of priests that is naturally elected to guide public deliberations in our knowledge society. The rest of us are the laity who stand in need of their management. So argues Bruno Latour in his critique of "Science"—not to be confused with "the sciences"—and what he calls a "(political) epistemology." A "(political) epistemology" that appeals to "Science" translates authority over matters of fact into a kind of authority over human bodies that neutralizes human difference.[70] In what Latour sees as a contemporary version of

[70] Latour, *Politics of Nature*, 10, 13. Latour defines "Science" as "the politicization of the sciences through epistemology in order to render ordinary political life impotent through the threat of an incontestable nature" (10). He states that the goal of "(political) epistemology" is "to short-circuit any and

Plato's cave myth, the "Philosopher-Scientist," who is "at once Lawgiver and Savior," is the only one capable of mediating between the realms of (singular, unified, unmediated) nature and (plural, cacophonous) cultures.[71] "The genius of the model stems from the role played by a very small number of persons, the only ones capable of going back and forth between the two assemblies [of nature and culture] and converting the authority of the one into that of the other." This political-epistemological version of "the myth of the Cave makes it possible to render all democracy impossible by neutralizing it; that is its only trump card."[72] Latour thus lends support to my conclusion that secularist appeals to scientific, neutral knowledge are actually ways to neutralize epistemic diversity and smooth out plurality in order to remove the frictions and barriers that might impede pseudo-salvific projects like extractivism.

What are the contours of the salvation story in which scientists are figured as priests, or even saviors? Since I have advocated for configuring science within a soteriological, existential framework, it is important to distinguish my priestly political ecology (outlined in the previous chapter) from malformed versions that posit scientific and managerial elites as an elite priesthood that mediates salvation to the needy, confused, self-destructive world. For existential matters of life and death also form the basis of the growth among scientists and activists of the apocalyptic and salvific language employed in climate change debates and sustainability science. The problem arises when this deployment of the existential register serves to unduly invest technoscientific institutions, and the apparatus of environmental management, with salvific meaning. Haraway named the problem well when she observed that declarations of an

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all questioning as to the nature of the complex bonds between the sciences and societies, through the invocation of Science as the only salvation from the prison of the social world" (13).

[71] Ibid., 11.

[72] Ibid., 13-14.

environmental state of emergency, such as climate change or the Anthropocene, are one way that technocrats are able to seize power over others.[73] Declarations of emergency immediately precede declarations of a state of exception. For evidence, one need only cite the Nobel Prize-winning earth scientist Paul Crutzen, who closed his declaration that we now live in a new age called "the Anthropocene" with a telling prescription for action:

> Unless there is a global catastrophe, … mankind will remain a major environmental force for many millennia. A daunting task lies ahead for scientists and engineers to guide society toward environmentally sustainable management during the era of the Anthropocene. This will require appropriate human behavior at all scales, and may well involve internationally accepted, large-scale geo-engineering projects to accomplish such goals as 'optimizing' climate.[74]

In this passage, Crutzen misappropriates the existential framework; he uses it to naturalize and justify the role of the scientist (and the engineer) as a priest who mediates between nature and human society and thus becomes the rightful regulator of sustainable human conduct, that is, conduct that his elite group of scientists deems is in accordance with nature. It is a power grab, regardless of intentions. And the appeal to "internationally accepted" projects, rather than an appeal to a democratic process, is an appeal to an international network of technoscientific elites who participate in international scientific and regulatory regimes. In short, Crutzen's is a political-ecological vision in which scientists and engineers are the primary agents of achieving salvation, envisioned here in the venerable image of a sustainable society.

To argue, as I have, that science is constituted not only by its relation to society but also its relation to existential matters of life and death, then, is only half the picture. The other half is that these two—science and society—are mutually constituted within a context of rivalry between

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[73] Donna Haraway, "Staying with the Trouble: Anthropocene, Capitalocene, Chthulucene," in *Anthropocene or Capitalocene?: Nature, History, and the Crisis of Capitalism*, ed. Jason W. Moore (Oakland: PM Press, 2016), 40.

[74] Paul J. Crutzen, "Human Impact on Climate Has Made this the 'Anthropocene Age,'" *New Perspective Quarterly* 22, no. 2 (Spring 2005): 16.

different political ecologies of sacrifice (and salvation), that is, different economies of life and death. For instance, in Crutzen's vision of what an Anthropocene world requires, it appears that scientists and engineers would have the ultimate, sovereign power to decide who and what should live or die in the name of sustainability. Nothing in Crutzen's writing suggests that he recognizes the degree to which scientists and engineers participated in creating the emergency that he now thinks they are fully capable of managing. Those who, with respect to environmental issues, advocate that we should just "follow the science" naively think you could construct a just political ecology with science alone. They therefore participate in reifying scientists and technocrats as a restricted priesthood. They pretend that empirical description, even when it is merely "the best account so far," is a sufficient condition for practical reasoning about environmental matters.[75]

The key difference between Crutzen's version of existential, salvific science and the one I advocate is the difference between a restricted priesthood—a restored clericalism—and a priesthood of all believers. It should be noted that the connections I see between this typically Protestant doctrine and science are not only part of my constructive project; the historian of science David Noble demonstrates that they also bear out in Western history. In his historical study to understand how science became a "world without women," Noble argues that science was shaped by the Catholic priesthood, which was characteristically restricted in Western Christendom to men, and its culture of asceticism. Noble states that the oft-deployed image of the scientist as a priestly mediator has a long and sure basis in history: The experimental scientist (known prior to the nineteenth century as a natural philosopher) developed in continuity with the

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[75] Alisdair MacIntyre contends that we should think of empirical sciences as, at their best, the best account so far: "The most that we can claim is that this is the best account which anyone has been able to give so far, and that our beliefs about what the marks of 'a best account so far' are will themselves change in what are at present unpredictable ways." "Epistemological Crises, Dramatic Narrative, and the Philosophy of Science," *Monist* 60, no. 4 (October 1977): 456.

ascetic clerical ideal. According to Noble, it was "in the struggle of the Latin clergy to impose itself between God and the rest of humanity, that the curious culture which spawned Western science took shape." He adds further, "As an essentially sacred activity, science took shape in an epic social struggle over access to divine knowledge," particularly in the wake of the Reformation and the license it gave to women to become interpreters of nature.[76] The ascetic virtues through which the priest gained his epistemic authority passed seamlessly to the scientist (which, during the time between the High Middle Ages and the modern world, were often one and the same person). This is why, in Noble's account, the age that we conventionally call "the Scientific Revolution" is better called "the Scientific Restoration;" it was "a clerical reappropriation of nature" that "signaled the removal of women from the realm of natural philosophy."[77] Against the conventional story of science's emancipation from religion, Noble thus identifies a powerful thread of continuity with respect to gender relations.[78] During this period, a "scientific priesthood" arose to both define "what" science was and "who" science was.[79] Clericalism having been rattled by the Protestant Reformation, particularly Luther's doctrine of a universal priesthood, some women seized the opportunity to become interpreters of nature, and there arose a counter-movement for clerical restoration. This restoration, in Noble's telling, was fulfilled in the kind of scientific priesthood represented by the Royal Society of London, which barred women from its experiments after one woman ruined one of Boyle's vacuum experiments when she insisted that a suffocating bird be released from a chamber where its air was being

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[76] David F. Noble, *A World Without Women: The Christian Clerical Culture of Western Science* (New York: Oxford University Press, 1992), xv-xvi.

[77] Ibid., 240-42.

[78] Other scholars have extended his analysis to class and race relations. See, for instance, Donna Haraway, "Modest_Witness@Second_Millennium."

[79] Noble, *A World Without Women*, 242.

evacuated.[80] The institutions, practices, and technologies of the new natural philosophy restored the gendered (and, as Haraway adds, class-stratified and racialized) order for a new era.[81] Noble argues that a contest, still with us today, ensued between efforts to restrict the scientific priesthood to a small, elite class, on the one hand, and efforts to expand the epistemic community more broadly, on the other.

Jasanoff champions this latter effort to democratize knowledge in her vision for the field of science studies. She writes that science studies arose in part to challenge the clerical authority of a restricted cohort of scientist-priests. In her apology for science studies as "a deeply normative project," Jasanoff argues that its primary task was "to render more visible the connections and the unseen patterns that modern societies have taken pains to conceal, often by enlisting the unquestionable forces of the physical world as represented by the voices of scientist-seers or as hardened into obedient machines." By revealing that which is neutralized and naturalized through the practices and institutions of scientific clerics, "science studies offer[s] novel means and resources to any who care enough to challenge the perceived order."[82] In contrast to fields of study that set themselves up as neutral, Jasanoff holds that science studies is a normative project that seeks to understand and challenge the authority of a restricted, priestly class of scientists whose observations of nature reinforce and reproduce modern social orders. Echoing Noble's Reformation-era women who found in Luther's doctrine of universal priesthood theological justification for becoming natural philosophers, Jasanoff envisions science studies as a normative

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[80] See Elizabeth Potter, *Gender and Boyle's Law of Gases* (Bloomington, IN: Indiana University Press, 2001).

[81] See Donna Haraway, "Modest_Witness@Second_Millennium." Haraway adds the important caveat that the categories of gender, class, and race were not just operative in this period, or even simply restored; rather, they were "remade" through the practices and institutions of experimental science.

[82] Sheila Jasanoff, "Beyond Epistemology: Relativism and Engagement in the Politics of Science," *Social Studies of Science* 26, no. 2 (1996): 413.

project to replace scientific clericalism with a democratizing approach to knowledge of nature and society in order to also democratize society.

My research is an extension of this democratizing project that adds to it an analysis of what I have called the third element—sacrifice—and the theological and religious dimensions of both science and society. As some European women in the sixteenth and seventeenth centuries found in the Protestant doctrine of universal priesthood a theological basis for becoming interpreters of nature, I find in it the theological basis of a renewed and revisioned citizen science. To that project I now turn.

III. Science, Secularity, and the Latent Commons

Like those of the leading scholars of science studies, my critique of science is not fueled by a desire to abolish or deny science; rather, my normative aim is to orient science and society toward a substantive vision of what is life-giving and real. The Christian tradition offers such a vision, which I examined in terms of a life-giving, Christological political ecology of *sacrafice*. I think the citizen science projects demonstrate one way of doing science that is oriented by this ecology, in which our human, priestly task is to bear witness to the God who went into a sacrifice zone outside the gates of Jerusalem and transformed it into a sacred zone, restoring the death-dealing air and soil defiled by sin and making a place for the new life of the creature. While rejecting new forms of clericalism—religious, scientific, or otherwise—I embrace the theological, political, and epistemic implications of the teaching that human priesthood is a universal call to an active life of bearing witness to God's work in Christ and the Spirit. The implication of this in terms of the production of knowledge is the need to pursue wisdom, and many voices and ways of knowing the world are needed in the pursuit of wisdom.

But does this particularist Christian approach to science and society not simply sow more seeds of division and conflict? Was Raney right that bringing religion into public debates about coal introduces a toxic and divisive element that just confuses the issues? My goal in this section is to show how the Restoring Eden projects, while rooted in a particular Christian, evangelical tradition of creation care, nevertheless created an opportunity for people with diverse religious, moral, and even epistemic commitments to discover shared norms and practices at the intersections of science, society, and ethics. Where one might expect separation and division, these projects became instead the occasion for connections in the midst of difference. Evangelical creation care activists, religiously diverse residents, and atheist scientists developed a set of common norms and practices in order to protect the inhabitants of coal's sacrifice zones from the forces that would sacrifice them and conceal their suffering. What is more, when the organizers took their model from rural, white, Republican Appalachia to urban, Black, Democratic Birmingham, they revealed a set of connections among groups otherwise defined by their social alienations from one another. Borrowing concepts from scholars who theorize the connections that they observe emerging across differences of ontology, species, race, and religion, I argue that this kind of science promotes a mutualistic, pluralistic vision of secularity best navigated through democratizing practices. Citizen science should be understood as a democratizing practice that makes empirical investigation accountable to social forces beyond the state and market. Further, as evidence of what this kind of citizen science makes possible, I show that the Restoring Eden projects harnessed a latent commons between the socially polarized inhabitants of sacrifice zones in Central Appalachia and North Birmingham. If Jesus Christ reveals what is true about the world—that falsely sacrificed creation is open to its sanctification—then we should expect that citizen scientists doing the priestly work of truth-telling will harness that reality for God's purposes in restoring and renewing creation.

The Restoring Eden case is not an exception that proves a liberal rule; rather, its exceptional status reveals something about wider relationships between religion, politics, and science that require a more constructive theory than the neutralist, liberal view offers. If the liberal view's normativity is based on a supposedly neutral doctrine of human commonality—a doctrine of human nature—my theory of a co-constitutive relationship between science, society, and sacrifice takes deep human plurality as its point of departure: Commonality is something discovered and constructed through encountering the other and collectively working to make a (partially) shared and life-nurturing world in which common action is possible. Anthropologist Marisol de la Cadena, political ecologist Anna Tsing, and political theologian Luke Bretherton illuminate what I observed in my case because they all draw on their ethnographic studies of human practices to replace liberal appeals to neutrality with empirically derived descriptions of the ways in which connections actually form across worlds, species, and religious convictions in practice.

Marisol de la Cadena challenges scholars to develop a better account of human difference. She agrees with Latour that while the anthropological concept of culture was developed as an index of human difference, it has tended only to affirm an acceptable range of human differences; its guardrails are set by a unified, unchanging, supposedly neutral conception of nature. In other words, cultural difference is rendered intelligible against the backdrop of an ontology Latour called "mononaturalism."[83] Cadena thought this failed to explain the connections she observed between indigenous groups and environmentalists who collaborated with one another to oppose extractive industries in Peru. So Cadena turned from the language of "culture" to the language of "ontology," finding in the latter a more appropriate lexicon to name different ways of being in different "worlds." If human difference reaches to the level of ontology, then

[83] Latour, *Politics of Nature*, 33.

how is it that people from different worlds seem to be capable of constructing anything in common? That is her question, and it is mine as well.

Cadena conducted ethnographic fieldwork in the Peruvian Andes. In contrast to scholarship that explains away indigenous concepts, Cadena takes seriously the politically significant relations that Andean indigenous groups have with nonhuman "earth-beings," such as the mountain named Ausangate.[84] Building on Latour's work, she noted that the existence of politically significant relations with personal earth-beings disrupts modern politics as usual; earth-beings are excluded from a politics defined by the human. Yet, she observed that indigenous groups and non-indigenous environmental activists, the latter of whom did not share these relations to earth-beings, nevertheless developed a shared politics against a mountaintop removal-like form of gold mining in Peru.[85] The groups discovered commonality when Ausangate was under threat by extractive industries. Cadena did not think the differences and commonalities she observed could be explained in liberal terms as cultural differences—differences of belief or perspective with respect to nature. Instead, she argued that the differences penetrated much deeper, to the level of ontology. In her analysis, it is not that the environmental activists "knew" the mountain to be an instance of nature worth protecting and that the mining company "knew" it to be a storehouse of resources to be mined, while the indigenous groups merely "believed" it to be an earth-being that might get angry and kill people. Rather, the different actors all inhabited different "worlds," or ontologies, that they negotiated through "cosmopolitics." The indigenous

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[84] Marisol de la Cadena, "Indigenous Cosmopolitics in the Andes: Conceptual Reflections Beyond 'Politics'," *Cultural Anthropology* 25.2 (2010): 334-370.

[85] One of her doctoral students, Fabiana Li, conducted research in a different region of Peru, where a Catholic priest championed indigenous ontologies in their shared fight against a gold mining project in Cajamarca. To complicate the issue even further, many of the Quechua-speaking indigenous groups at the forefront of her case had embraced Seventh Day Adventism since the late twentieth century. See Fabiana Li, *Unearthing Conflict: Corporate Mining, Activism, and Expertise in Peru* (Durham, NC: Duke University Press, 2015), especially 107-42.

groups had real, politically significant relationships with these earth-beings such that the earth-being Ausangate entered into politics and took sides with the environmentalists against the mining company.

To understand these pluralistic coalitions and contestations that emerged across different "worlds," Cadena developed the analytic concepts of "partial connections" and "equivocations." Though indigenous groups and environmentalists differed regarding "what was there," these groups nevertheless developed a shared conception of "the environment" as something to be defended, even if they meant different things by it and they defended it for very different reasons. "The environment" became an "equivocation," that is, a politically potent concept that inhabits a space somewhere between sameness and difference and allows just enough commonality to develop to make collective action possible. This equivocal concept of "the environment" developed out of the "partial connections" that indigenous groups and environmentalists discovered between their different worlds in relation to, in this case, a mountain. Cadena concluded from her study that reconceiving politics in an era of ecological crisis and in the midst of deep human difference ought to begin with attention to this kind of "cosmopolitics."

Cadena's framework is particularly applicable to my case study, where some actors engaged in citizen science in order to love, serve, and protect God's creation, others to try to stem the health crisis among their families and neighbors, and still others, especially the lead scientist, to protect the integrity of science as a neutral form of knowledge to guide political deliberations toward justice. As I examined in Part I, Michael was a leading proponent of the liberal view, even though in practice he collaborated with groups that directly threatened liberalism's normative account of religion, politics, and science. I suggested that his practice contradicted his theory primarily because of his moral commitment to the residents of Appalachia's coalfields, some of whom he came to know personally. Michael was committed to the idea that the empirical truths

generated by scientific practices alone should form the basis of a just social order. Yet he partnered with groups whose theological truths generated by their relationship to God, God's creation, and their neighbors made the health study projects possible. Michael's moral commitments, in other words, trumped his liberal commitments, allowing him to ultimately discover a form of science that he could carry out with evangelicals.

Cadena's cosmopolitical theory helps in understanding that "citizen science" emerged from these projects as a shared norm and practice among groups who conceived of the threat that mountaintop removal posed in vastly different ways. "Citizen science" became an "equivocation" wrought through the "partial connections" made across a plurality of religious and epistemic worlds. Neither the religious organizers nor the atheist empiricist needed to agree on a neutral description or interpretation of the problem prior to collaborating to address it through science. They did not need to agree on whether the mountains were God's creation, a temporal product of natural processes, a storehouse of resources, or a combination of these. They did not need to agree on the status of coalfield residents as neighbors, rights-bearing subjects, or centers of moral experience. In response to the possibility that mountaintop removal was causing untold-yet-invisibilized sacrifices, these groups developed common norms and practices around science. What is more, the defining feature of this "citizen science" was not the fact that non-scientists were involved in the data collection. It was that it enacted an alternative kind of citizenship, or membership: those whom extractivist science rendered victims and non-scientific amateurs, the citizen science projects made their primary agents and focus. The fact that non-scientists participated in the production of scientific knowledge was secondary to the fact that this kind of "citizen science" held scientific practices accountable to a moral economy that was at odds with extractivism.

Political ecologist Anna Tsing does for connections across species and racial difference what Cadena does for connections across worlds: She provides a vocabulary for understanding the often surprising human and nonhuman relationships that emerge from extractive landscapes. To understand the multispecies assemblages she witnessed emerging from landscapes ruined by extractive capitalism, she developed the concept of a "latent commons." Her concept renders intelligible one of the most significant aspects of the Restoring Eden case: after completing four studies in Central Appalachia, the multi-religious and multi-epistemic partnership moved southward along the Appalachians to Birmingham.

Similar to Central Appalachia, in a handful of neighborhoods in Birmingham, Alabama, Black, urban residents were also facing a powerful alliance between the coal industry and government officials. As they had done in Central Appalachia, Restoring Eden partnered with churches and both religious and non-religious organizations in the effort. Like the suffering of white, rural residents in Central Appalachia's coalfields, Black suffering in Birmingham was also intentionally and systematically rendered invisible. The industry and government personnel were different in each case, but their strategies were alike.[86] A federal judge found a coal executive, a lawyer, and a state representative guilty of participating in a bribery scheme that sought, in part, to keep scientists out of the Birmingham neighborhoods. For them, an absence of scientific data was strategic: It inhibited a coalition of residents and environmentalists from getting their 35th Ave Superfund site on the Environmental Protection Agency's National Priorities List. Had the coalition succeeded, the coal company would have been liable to pay a significant share of the cleanup costs. However, as Trump-appointed U.S. attorney Jay Town, the prosecutor in the case,

[86] Actually, in some surprising ways, some of the industry and government personnel did overlap, as in when the coal company Bluestone Resources, owned by the son of West Virginia Governor Jim Justice, purchased one of the coke plants in North Birmingham in August 2019.

put it, “It's cheaper to pay for a politician than it is to pay for an environmental cleanup.”[87] Though it ultimately cost them multiple convictions for bribery, the involved companies have so far been successful in evading their responsibility to pay for the cleanup. And, partly owing to the deterioration of Peter’s health and the dissolution of the Birmingham study, residents’ health status remains largely invisible. Regardless, the connections lie latent.

Tsing’s work teaches us to not only expect surprising multiracial connections emerging from extractivism’s sacrifice zones, but to also see other-than-humans playing an active role in making these connections. Her research on the matsutake mushroom examines the role this one, elusive mushroom played in gathering together a diversity of human groups, from Vietnam vets and Vietnamese refugees foraging in Pacific Northwest forests extracted for timber to transnational capitalists and gift-givers in Japan. Because the matsutake grows in disturbed forestscapes, and nobody has yet learned how to cultivate it, it must be foraged. Therefore, because capitalists could not control such an elusive but valuable mushroom, they relied on a diverse group of foragers who developed craft forms of knowledge to find and sell them. While these groups were often divided, and thus unable to challenge prices set by the capitalists, they eventually began organizing to reclaim some degree of power from the capitalists dominating the matsutake trade. Tsing saw in these efforts a multispecies set of connections becoming a political force. This kind of organizing required what she called an “art of noticing” the human and nonhuman entanglements lying latent in extracted landscapes.[88] An elusive mushroom that grows only in disturbed landscapes, the role that mushroom plays in Japanese friendships, the Vietnam vets and Vietnamese refugees who learned to forage them; the connections were there to be

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[87] “How a lawyer, a lobbyist and a legislator waged war on a Birmingham Superfund site,” *al.com*, April 24, 2019, [h…w].al.com/news/2019/04/how-a-lawyer-a-lobbyist-and-a-legislator-waged-war-on-a-birmingham-superfund-site.html.

[88] Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton, NJ: Princeton University Press, 2015), 254-55.

discovered and harnessed, but they lay dormant until organizers saw and harnessed them. This is the "latent commons."[89] Harnessing it is political work: It involves mobilizing some of these interspecies entanglements in ways that provoke conflict with alternative, extractivist ways of mobilizing multi-species relations.

In my estimation, the Restoring Eden projects similarly harnessed a "latent commons," especially as Restoring Eden moved southward from Central Appalachia to Birmingham, Appalachia's southern gateway. Restoring Eden harnessed at least three latent commonalities between the disparate populations of these regions that are otherwise obscured by, for instance, recent electoral maps. Such maps reflect slowly achieved separations and alienations—Republican vs. Democrat, white vs. Black, rural vs. urban. Insofar as these social alienations keep these groups divided, the coal industry is able to harness carbonaceous matter in both places for extractive purposes. However, Restoring Eden practiced the "art of noticing" what these populations shared in common: Christianity, coal, and common suffering at the hands of coal companies. Rather than seeing the Appalachian mountains through the lens of secularism's ecological analogue—that is, as a disenchanted storehouse of inert natural resources for human projects—they saw these carbon-rich mountains wrapped up in a divine economy of creation and new creation. For them, Christ, whose love for wounded creatures took him to the cross, troubled the idea that it was God's plan to transform mountains into blastable landscapes and human neighbors into collateral damage. The Appalachians and their carbonaceous matter thus became a site of tension between the two political ecologies I have examined in this study: one divine and the other extractivist. And though Restoring Eden encountered Christians opposed to "environmentalism" in both places, in both places they also harnessed Christian networks and organizations and non-religious groups committed to human health, environmental justice, and

[89] Ibid.

setting moral limits on the coal industry's social license.[90] When they harnessed the connections they noticed among communities along the Appalachian mountain chain, they integrated religious and scientific visions in a way that made possible the formation of a new ecopolitical "we" that could emerge from sacrifice zones. Though the development of multiracial forms of collective action was not Restoring Eden's explicit goal, and the Birmingham project ended before the full implications of these connections could be assessed, their work of making visible shared forms of suffering and concealment at the hands of the coal industry nevertheless made such forms of concerted action possible.

According to Tsing, "We need many kinds of alertness to spot potential allies" as they assemble and emerge in the ruins of extracted landscapes."[91] In addition to alertness, we also need people who believe that a latent commons is there to be discovered, as well as people with the virtues to harness the relational entanglements they discover and turn them into political forces capable of challenging extractivist patterns of harnessing them. Restoring Eden showed how to do this work of noticing and harnessing geological, religious, and political connections in order to bear witness to a different economy of creation and salvation. Learning from them, we can trust that because God characteristically transforms the world from its sacrifice zones, Christians have good reason to expect that harnessable relations and transformative possibilities lie latent in ruined landscapes. Why? Because these places are not abandoned by God; in fact, they are where we should expect God to be present, creating and giving new life to the human and otherkind creatures otherwise slated for sacrifice.

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[90] Restoring Eden was certainly not the first to traverse the Appalachians in this way. Groups in both places collaborated as recently as the mid-twentieth century for labor and racial justice. See, for example, the Highlander Folk School, now renamed the Highlander Research and Education Center.

[91] Tsing, *Mushroom*, 254.

Tsing and Cadena show that connections amidst deep plurality need not presuppose agreement about some neutral meeting ground. Whether that neutral ground is the unified, unchanging conception of nature that Cadena attacks or the naturalized humanisms, including critical humanisms, that Tsing challenges, neutrality is actually the enemy of pluralism. Connections form in spite of neutrality, not because of it. They form to contest the ways that extractivists harness neutrality for their own purposes.

By adding a theological dimension to their analysis, I am suggesting that the kinds of connections I observed, and that Tsing and Cadena theorize, should be seen as part of God's economy, that is, God's work in the world to carry out God's plan for creation. Citizen science that both contests extractivism's false sacrifices and harnesses connections across modes of difference to build a common (enough) world of meaning and action bears witness to what Christians know is real about this world caught up in God's economy of creation and salvation. Luke Bretherton names this task of building a common (enough) world of meaning and action a Christian practice of political theology in this secular, contingent history that is the sphere of God's economy.

Bretherton provides a theological interpretation of these connections and the ends toward which they are harnessed. To Tsing's and Cadena's arts of noticing, building, and harnessing a commons with others (including nonhuman others), Bretherton adds the "interpretive art for discovering faithful, hopeful, and loving judgments about how to act together in response to shared problems." According to Bretherton, this is the art of "political theology," and it is "best practiced in the company of others, and through active listening to outsiders, whether inside or outside of our primary community."[92] In this theological approach, the marker of faithfully harnessing connections among diverse creatures is not whether they avoid conflict, but whether

[92] Bretherton, *Christ and the Common Life*, 6.

they bear witness to God's work of making life-giving social communication happen and loving and just forms of concerted action possible where there was no community or commonality. Gathering together creatures to build a common life in the midst of those greater good projects that accommodate death-dealing sacrifices is the characteristic work of the Holy Spirit, the communicator of divine life to creatures and the perfector of creation. "If the church is to witness to the work of the Spirit, who is poured out on all flesh, part of faithful political judgment is discerning where the Spirit is at work in the world healing wounds, exorcising oppression, and bringing new life."[93] Though this will at times entail provoking and engaging in conflict, "on a Christian account, it is communion, not conflict, that is primordial."[94]

This fundamental trust that communion is more primordial than conflict undergirds Bretherton's proposal for a "faithful secularity."[95] Stemming from his case study of how a plurality of religious organizations developed common norms and practices through community organizing, Bretherton argues for a need to distinguish between "secularism" and "secularity."[96] If, as argued above, "secularism" is a normative project that projects itself as religiously neutral, "secularity" is a concept drawn from political theology to name a temporal realm in which we should expect that a plurality of human worlds can be transformed into mutual connections. In this sense, secularity "entails a commitment to the formation of *mutual* rather than *neutral*

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[93] Ibid., 7.

[94] Ibid., 219.

[95] According to Bretherton, the "faithful secularity that certain kinds of democratic politics generates allows for the public recognition and interplay of the myriad obligations and commitments that citizens keep faith with (whether 'transcendent' or 'immanent') and which must be coordinated and negotiated in order to generate a common life." It is a "genuinely plural pattern of secularity that is open to multiple configurations of time and space. In a faithfully secular account theological forms of analysis stand side by side with other modes and contribute to the coloring and texture of the overall picture." Luke Bretherton, *Resurrecting Democracy: Faith, Citizenship, and the Politics of a Common Life* (Cambridge: Cambridge University Press, 2015), 8.

[96] Bretherton, *Christ and the Common Life*, 227-257.

ground."[97] This concept of secularity is found in the Christian theological tradition (from Augustine's *saeculum* to Dietrich Bonhoeffer's "penultimate") that associates the secular not with the modern—that is, not with a notion of historical progress—but with the temporal and contingent. It has to do with that which is created, fallen, and open to conversion (transformation) in God's freedom and love. In other words, the secular contrasts not with religion but with that which is eternal. Its counterpart being the eternal, secularity in no way denigrates historical and material life; just the opposite, it values the penultimate goods of historical, material life for the ways they participate in and give testimony to the ultimate good of communion with the life-giving God. God, in love, moves toward creation, not away from it. Affirming secularity means rejecting utopian projects and progressive narratives of history, on the one hand, and separatist projects and declension narratives of history, on the other. This is because both progressive and declension narratives justify inattention to others borne of an over-confidence in one's conception of progress or goodness. Whereas the former idolatrously invests historical progress with ultimate meaning, rendering others sacrificable in the name of advancement, the latter fails to affirm the goodness of created, historical existence in time, including the goodness of the creatures they associate with the fallen, sinful world. In contrast, promoting secularity entails seeking the good and justice of the noneternal garden-cities, or political ecologies, of which we are citizens and members, trusting all the while that God can and does raise up creatures to convert idolatrous structures and sinful patterns of existence into signs that bear witness to their full purpose and meaning in God's kingdom.

This normative, theological conception of secularity also favors the kind of democratizing project I observed in the Restoring Eden studies. Against the grain of popular imagination, Bretherton argues that secularity actually requires religious and moral pluralism as a

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[97] Ibid., 254 (emphasis original).

condition for developing a common life. Secularizing alternatives, in contrast, lend themselves to concentrated forms of power. Some particular entity becomes the primary arbiter of the neutral, whether it is the market, the state, or, I would add, the research institute. In other words, whereas liberalism and secularism threaten to neutralize human difference through *a priori* appeals to human commonality, a commitment to secularity entails a need to engage with human others to discover and build a common life through ongoing processes of negotiation, contestation, and conciliation. In Bretherton's view, particular religious commitments advance secularity by relativizing and limiting the power of the state and market to shape social life, for both state and market are prone to totalizing forms. I would simply add the power of science, for it has its own proclivities to monopolize truth, often in ways that bolster the totalizing tendencies of the state or market. In other words, when scientific truths are restricted to a small, clerical class, they are too easily captured by the totalizing forces of the state and market. In contrast, a universal priesthood, enacted through citizen science, holds empirical truths accountable to the social realm of associational life, where creatures can flourish. For this reason, "the problem at the heart of debates about the secular is not religion per se but plurality."[98] Religious, moral, creaturely, and epistemic plurality is that which holds open democratic politics and the possibility of discovering a common life with others rather than flattening out differences through appealing to a neutral outside. A commitment to "secularity" involves seeking goods in common, developing partially shared concepts, and noticing and harnessing the commons that lie latent across all forms of creaturely difference.

Beyond the realm of politics, this distinction between "secularism" and "secularity" also sheds light on the epistemic elements of a democratic common life. If "secularism" is a mode of governance that neutralizes difference and disciplines religion, and "secularity" is a time in which

[98] Ibid., 255.

a plurality of traditions can commit to discovering historically contingent forms of mutuality, then we ought to distinguish between a secularist science and a science that aids secularity. Rather than look to science as a neutral arbiter between political, religious, and moral conflicts, which is how some have mythologized the empirical sciences (i.e. as a civilizing force in history), science should be seen as a set of practices and institutions that, at its best and in our particular historical context, allows a plurality of worlds to develop enough norms and knowledges in common to address shared matters of concern and care. The production of scientific knowledge, in this view, is one important ingredient of practical reasoning in a "knowledge society" such as ours.[99] It can provide our best empirical sense of what might be going on. However, if it is going to open up democratic deliberations over what is to be done amidst deep human plurality, rather than close them down by appeal to a neutral and static description of the "nature" of things, it must also engage with traditions of meaning and philosophies of life. These latter also claim to know something about what is going on and who is worthy of our moral attention; they too should be part of the process of producing and interpreting empirical data so as to act on it.

My argument is that secular science—a science that supports Bretherton's "faithful secularity"—should be seen as an urgent form of Christian practice uniquely suited to our time. In contexts in which sacrificed lives and lands are intentionally kept invisible so that extractive industries might maintain their social license, citizen science that makes these invisibilized costs visible is a practice of love for one's neighbors and the earth. But it is a practice of love that is oriented by faith and hope. Its practitioners are invited to trust that God is indeed at work in the world, raising up creatures to transform the world's sacrifice zones into sacred zones; they can trust, in other words, that God's Spirit is raising up witnesses to the reality that God in Christ has re-membered and is re-membering to the community of divine life all the creatures dis-membered

[99] Domíngues Rubio and Baert, "The *Politics of Knowledge*," 1.

by our ecologies of sacrificial death. With love and faith, it is also a practice of hope, for the practitioners of citizen science have reason to believe that their efforts might generate new forms of commonality among human and otherkind creatures capable of moving beyond the social separations and creaturely alienations that aid the flourishing of extractivist political ecologies and allow other, non-extractive creaturely assemblages to emerge in their place.

The arts of noticing, discovering, and harnessing the latent commons in extractive landscapes are the arts of ecopolitical theology. When scientific practices, institutions, and knowledges serve these purposes, they too bear faithful, loving, and hopeful witness to God-shaped reality. And in our context, where the sciences just as often serve extractivist purposes, citizen science can be a powerful aid in reorienting our empirical sciences to serve the task of making sacrifice zones into places of life-giving refuge for all the creatures dis-membered and alienated from one another and, ultimately, from life-giving communion with their Creator.

IV. Science as Christian Witness

My final task in this chapter is to develop a concept first introduced in chapter one to theorize this "art of noticing" more precisely as a threefold form of witness that opens up public, democratic forms of environmental practical reasoning about fitting responses to environmental injustices. Though the empirical knowledge that is produced through science is a necessary element of environmental practical reasoning, I showed that it is not sufficient; science was and is easily captured by state- and market-driven extractivist projects that produce environmental injustices. To be able to generate fitting responses to the forces that produce sacrifice zones, then, scientific knowledges need to be brought together with other knowledges that can both situate science, thus offering a way to evaluate its contributions and limits, and hold science accountable to the wider need for social and ecological relationships that promote flourishing life.

The threefold form of witness introduced in chapter one can now be deepened by my analysis of sacrifice in subsequent chapters. My foregoing analysis of the Restoring Eden projects has demonstrated that they integrated faith, science, and environmental action through a complex concept and practice of witness in response to extractivism's invisibilized sacrifices. Drawing on this analysis of their practice of citizen science as restorative truth-telling, here I theorize theirs as a practice of witness that is, at once, scientific, moral, theological, and at times even sacrificial, in the truest sense. Restoring Eden showed that integrating these three aspects of witness can both fill out an account of environmental practical reasoning and serve to harness the connections that lie latent in extracted landscapes for a different political ecology. In response to what they saw as the false sacrifice of lives and lands in Appalachia, Chicago, and Birmingham, the Restoring Eden projects brought empirical description, moral commitment, and Christian vocation together into a thick practice that sought simultaneously to democratize science, challenge environmental injustices, and point people, including both the surveyors and the surveyed, toward their true source and giver of life.

Though I develop the following account based on my analysis of Restoring Eden's distinctive practice of citizen science as restorative truth-telling, this framework could be used to guide citizen science more broadly, whether or not it is done as a form of Christian practice, and could even be adapted to orient scientific inquiry in general. An adaptation of this latter sort would seek to free science from corporate and state capture (for accumulative and technocratic purposes) to serve the pursuit of a common life that bears witness to God's life-giving work in creation and salvation.

A. Empirical Witness

Restoring Eden developed their model of citizen science in order to fill an empirical gap in the process of coming to public judgment on coal issues. In the American context, public deliberation, policy, and legal judgment on environmental issues, as well as industries' social license to operate, are largely mediated by scientific visualizations that bear witness to the efficient causal associations between things. In the case of Restoring Eden, for instance, the projects made (partially) visible in numbers, charts, and graphs some of the causal relations between lung diseases and cancers, on the one hand, and physical proximity to coal mining and burning operations, on the other. They did this because there was an empirical gap: No scientist, research institute, government, or business had previously made these physical associations visible. What explained the gap? We could speculate, as Michael did, that this gap resulted from, one, a lack of funding for research that might cast the coal industry in a negative light and, two, assumptions among scientists that poor health in Appalachia's coalfields was a product of poverty and individual behaviors like smoking, not coal mining; one coal industry spokesman even dabbled in his own theory when he suggested a third explanation, that consanguinity—in-breeding—was a more likely candidate than mountaintop removal for explaining Appalachia's health conditions.[100] However, regardless of the empirical gap's source, there was a gap in knowledge without which environmental action was severely impaired.

This empirical gap should not be confused with a knowledge gap. Michael and Peter, for instance, both recognized the prior existence of what is variously called experiential, local, lay, community, or anecdotal knowledge about the health effects of living near coal industrial sites.

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[100] Ken Ward, Jr., "Mountaintop removal and birth defects: Just what are the coal industry's lawyers talking about?," Coal Tattoo, July 11, 2011, [h…]://blogs.wvgazettemail.com/coaltattoo/2011/07/11/mountaintop-removal-and-birth-defects-just-what-are-the-coal-industrys-lawyers-talking-about/.

The Restoring Eden health studies were a response to these prior knowledges: They made these prior knowledges the basis of a hypothesis that they could test through the collection and analysis of quantitative, empirical data. These lay knowledges, moreover, were often very sophisticated. In Appalachia, for instance, resident Bo Webb told me that after he started to suspect a connection between coal and poor health, he followed school buses leaving Marsh Fork Elementary School, just below a 2.8 billion gallon coal slurry dam and next door to a coal silo. After parents complained that their kids got sick after attending school, Webb noted the houses where the buses dropped kids off at home, and then visited those homes to ask parents about their kids' health. In Birmingham, a rail line passed just beyond the backyard of one resident, who lived about fifty yards from the coal plant. She reported to me that she could identify what chemicals and materials were on every train going to and from the coal plant simply by using her sense of smell. This is how she knew that the coal company was using materials they did not report to regulatory agencies. She trained her nose and reported violations to the authorities. Regardless of how sophisticated or prevalent these local knowledges in Appalachia and Birmingham were, however, they did not count as publicly authorized environmental knowledge. That is, they did not bear the kind of scientific authority that is required to guide public deliberations about environmental health issues.

Where does authorized environmental knowledge come from? It comes from scientists. But what makes their science possible? In the U.S. context, nearly all scientific research is funded by businesses and the federal government (in 2020, 70% and 22%, respectively) and nearly all of it is performed by businesses, universities, and the federal government (in 2020, 73%, 13%, and 10%, respectively).[101] Market and state entities are, by far, the primary drivers of scientific

[101] For instance, in 2020 in the U.S., the National Science Foundation reported that businesses provided 70% of the funding for research and development in science and engineering and the federal

knowledge, including knowledge about the environment. While I do not take a deterministic, reductionist view that science simply serves the interests of its funders and performers, these statistics nevertheless raise a number of questions about the nature of the projects that science and technology advance, the kinds of questions scientists ask, the reason for the value that market and state entities ascribe to scientific knowledge, and the character of the entities to which science is accountable. Some argue, for instance, that these dynamics explain why medical research tends to focus on health treatments rather than causes.[102] My view is modest: Neither a corporation nor the state is likely to prioritize the kind of knowledge production sacrifice zone residents and their allies might use to contest the forces that make their homes sacrifice zones. The state may be more likely than businesses to do so, but there is great competition for its limited funds, partisan battles over who controls the state's purse, and the dynamics whereby, as in Central Appalachia and Birmingham, state and market forces are deeply intertwined; individuals move seamlessly between "private" and "public" spheres. So if market and state entities are not filling the empirical gaps about the efficient causes of sacrifice zones, then other sources of time, energy, and money are needed.

Absent useful, empirical data and publicly authorized forms of environmental knowledge, concerted action for environmental justice is largely a pipe dream. This was the meaning of Restoring Eden's slogan that I examined in the first chapter: "You can't count what you haven't

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government supplied 22%. The remaining 8% was funded by nonfederal governments, nonprofits, and colleges and universities. The performers of research and development (as distinguished from the funders) differed only slightly, the biggest difference being that colleges and universities performed 13% of the research (about half of this funded by businesses), the federal government 10%, and businesses 73%. Beethika Khan, Carol Robbins, Abigail Okrent, *The State of U.S. Science and Engineering 2020* (National Science Foundation, 2020), [h…s]://ncses.nsf.gov/indicators/.

[102] See Willis Jenkins, *The Future of Ethics: Sustainability, Social Justice, and Religious Creativity* (Washington, DC: Georgetown University Press, 2013), 219.

measured, so sometimes justice begins with a clipboard!"[103] Effective environmental action, in other words, is contingent on there being local, useful, empirical data that bears the authority of science. Adapting a phrase from Francis Bacon, one could say that publicly authorized environmental knowledge is power. But rather than using empirical knowledge to regain dominion over nature, as Bacon proposed, Restoring Eden envisioned a knowledge that generated power for some political ecologies against others.[104] This kind of knowledge generates power that community organizations can use to fight for change through public channels.

This need for local, authorized knowledge can be understood in contrast to global environmental knowledge, as in climate science. Climate science data about melting glaciers and atmospheric CO_2 levels, for instance, regardless of their accuracy and credibility, and regardless of any scientific consensus they might have, are of little help in generating collective action to contest sacrifice zones. In fact, global knowledges can actually be used to inhibit local environmental action. For instance, coal companies in Appalachia became adept at portraying "environmentalists" as lovers of an abstract and distant nature who would sacrifice coal jobs and residents' livelihood to protect polar bears and other endangered species. Local, authorized knowledge about the effects of coal mining was much more threatening because it was harder, though certainly not impossible, to neutralize. It threatened to shift the burden of persuasion onto the coal industry to prove that they were not storing their externalities in the lives of coalfield residents. Citizen science, in other words, can produce environmental knowledge to address more proximate, achievable pursuits of justice. In so doing, it contrasts with those scientific practices that subordinate environmental knowledge, and the power it produces, to sustaining the current

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[103] Fieldnotes, 4/9/18.

[104] For an in-depth study of how Francis Bacon and many of his contemporaries understood empirical science as an aid to regaining an originary dominion that was lost at the Fall, see Peter Harrison, *The Fall of Man and the Foundations of Science* (New York: Cambridge University Press, 2007).

politico-epistemic order. And for Restoring Eden, generating power for environmental justice is what the call to love God, neighbors, and creation looks like when the air, soil, and water creatures depend on for life are made to be the instruments of false sacrifice.

As the founder of the evangelical organization Christians for the Mountains and one of the organizers of the Appalachian health studies, Allen Johnson summed it up, "Challenges to the autocratic rule of the coal industry are rising as … stories emerge and more independent studies are done. Gathering strong data is a precursor to improving public health through public policy."[105] When citizen science is practiced as a form of restorative truth-telling, it uses scientific practices and visualization technologies to generate an empirical witness in numbers, charts, and graphs that can open up processes of coming to public judgment on environmental justice issues. It uses scientific practices, institutions, and knowledges to become witness to the efficient causal relations between things that organizers think, based on the lay knowledges of residents, threaten lives and lands.

B. Moral Witness

Citizen science as restorative truth-telling is also a form of moral witness in at least two dimensions. First, it is oriented toward the love of sacrificed human and otherkind creatures, and, second, it makes the very practices of science, such as conducting household surveys, a school of love for its practitioners. It is designed both as a practice of love and a school of love that seeks to form its practitioners in the love of neighbor and the love of creation.

The integration of empirical and moral forms of witness is encapsulated by Peter's saying that in addition to the projects making people's stories visible as data, "the students themselves

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[105] Allen Johnson, "And the Mountains Will Fall," *Sojourners* 43, no. 4, April 2014, 9-10.

also become witnesses." After creation care funds dried up with the 2008 election and Peter's cancer returned, he needed to figure out how to get young people to Appalachia for the witness tours without much money. Environmental funders interpreted the election of Barack Obama to the presidency as a sign that the federal government would solidify its environmental regulatory authority long into the future, in which case there was no longer a need to fund groups that organized evangelicals around a creation care message; funds for creation care organizations dried up. Around the same time, Peter's cancer metastasized and he was told he had only six months to live. So he closed Restoring Eden's offices and let his staff go, leaving just the shell of an organization. When treatments prolonged his life, however, he decided to adapt a model he learned from Catholic priest Fr. John Rausch during an interfaith mountaintop removal witness tour. Peter thought an adapted version of these Appalachia witness tours could be organized and carried out relatively cheaply from one year to the next, depending on the state of his health. So he harnessed Christian volunteerism, the Christian college practice of service-oriented spring break trips, the (by then controversial) practice of short-term mission trips, and his network of contacts at Christian colleges. He thus fueled science with a Christian call to love God, neighbors, and creation. In this sense, the citizen science projects were a practice of love.

The projects were also a "school" of love. In fact, more than environmental justice, scientific integrity, or any other moral or practical goal, Peter's primary concern was to convert young Christian volunteers themselves to the care of God's creatures and creation. For instance, while it detracted from time that could have been spent collecting more data, the project organizers took volunteers to sing and worship God on beautiful mountaintops overlooking Appalachia's stunning landscape, only to then visit a mountaintop removal site for a service of lament. During students' training period and then again every evening throughout the week, project leaders also led them in periods of guided reflection and prayer so that they could thicken

their work as data gatherers by weaving it together with Christian spiritual practices. In this way, volunteers' encounters with sacrificed and suffering creatures were not only instances of love; they were also intended to form volunteers in a wider and more integrated practice of love. The projects sought to create a context in which the volunteers could learn to become neighbors—to become neighborly—in the midst of a system that concentrates its hidden costs in suffering, invisibilized neighbors. The empirical knowledge students produced was inseparable from the relationships they developed through encounters with their suffering neighbors. It was morally participatory knowledge.

Testimonies from volunteers suggest that the Restoring Eden projects were relatively successful in cultivating this kind of morally participatory knowledge. Recall the story of Sarah recounted in chapter two. After her first year as a volunteer, she changed her studies at her Baptist college in Tennessee from religion to environmental health because she had been inducted into a way of doing community health science as an expression of neighbor love. She went on to volunteer every year thereafter and to study under Michael for a master's degree in environmental health. She eventually assumed leadership of the Birmingham project after Peter's cancer no longer permitted him to travel to Birmingham. Recall also the story of Alex, the volunteer and Restoring Eden chapter president at her Baptist college in Alabama. She prayed in the doorway with a grandmother who was grieving the death of her two-year-old grandson of a congenital heart defect just days before. Reflecting back on the encounter, Alex said she was "thankful" for having been able to pray with this grandmother because it both rooted her creation care values more deeply and allowed her an opportunity to mourn with those who mourn. With respect to empirical witness, Alex was unsuccessful: She failed to get a completed survey from the household. Yet her terms of success were different: She was able to be prayerfully present to a

suffering neighbor. She says that her message about "caring for God's creation" was thereafter infused with heart.

John, another volunteer from a Midwestern evangelical college, told of an encounter that infused his studies in geology with moral purpose. He said that after people participated in the survey, they often invited him and his partner to stay and talk, sometimes even to pray with them. During one of these times, he was talking with a teenage mother pregnant with her second child. The young mother talked about her commitments to health and education since giving birth to her first child; she wanted her kids to grow up and find a way out. With great pride she pointed as evidence out the window to a small kitchen garden and to her free-range chickens in the yard of the house she shared with her mother and grandmother. While walking up to the house to conduct the survey, John had commented to his partner how sad it was that this family lived just below a valley fill, where the coal company piled waste ("overburden") from mountaintop removal. I'll quote him at length:

> I mean, you could see the terraced rock there. You could see the way the weathering of the rock was causing the stream to go red with heavy metals and algae blooms. And there was very clearly a lot of toxic stuff coming off the mountainside here. And there were chickens splashing around drinking water that probably had mercury, lead, selenium, all sorts of heavy metals draining into their system. And then I go inside and there's this girl telling a story about how she wants so much for her child and how she's trying so hard to do the right thing by growing fresh eggs, eating healthy food, and carrying the pregnancy to term. But in doing so, she was filling herself with chemicals that are terrible for a developing child, for a fetus. And so it's … [he broke off] … That's the type of thing that really drove home the destruction. That personal story just downstream.[106]

John returned to West Virginia again that summer to continue research with Michael on a study that grew out of the Restoring Eden projects. He also met the woman whom he would later marry, who was also a volunteer with Restoring Eden. Peter officiated their wedding. Years later, the two were some of the last to visit Peter before he died.

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[106] Interview, 6/29/16.

Are Sarah, Alex, and John examples of what Peter meant when he said that, through their participation, students not only collected data, they also "became witnesses"? I think so. Peter often told their testimonies to people who were just learning about the model. In my terms, each of these individuals developed a morally participatory form of knowledge through their encounters with human beings who were slated for slow sacrifice. Donna Haraway once imagined a kind of science that would not form its practitioners into God-like mirrors of nature but would instead "allow us to become answerable for what we learn how to see."[107] I think citizen science as restorative truth-telling is one example of what this kind of science looks like. If, as Haraway observed, the objects that scientists make visible also exert formative pressures back on the scientists themselves, then both moral formation and scientific modes of seeing are mutually constitutive. In other words, one could know something about the character of knowledge itself by looking at how it forms those who produce it. Her observation raises myriad questions and implications that need to be explored in more depth than I can do here. However, it suffices to note that this concern for the moral formation of practitioners was an essential aspect—for Peter, the primary goal—of the Restoring Eden projects. The concern for moral witness, in other words, drove the empirical witness. The science was held accountable to the ethical relations between persons and the concern to make neighbors out of strangers and fellow creatures out of "nature."

Some thinkers have called morally accountable knowledge "witness." When philosophers and theologians in the twentieth century reached for a form of knowledge that would render our concepts, language, and knowledge accountable to ethical relations, they turned to the language of witness and testimony. They found in that language the appropriate way to situate our partial knowledges of other creatures within a context that exceeds the material creation. Mid-century thinkers Gabriel Marcel, Emmanuel Levinas, and Karl Barth all used the language of witness to

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[107] Haraway, "Situated Knowledges," 583

signify the in-breaking of an uncontainable third person that calls human beings into ethical relations with others. French existentialist philosopher Gabriel Marcel called this third person Grace. He likened it to an excessive flow of light or being that one can receive or reject only through concrete acts of fidelity, love, and hope toward other human beings. Jewish philosopher Emmanuel Levinas, in his effort to make ethics more primary than ontology, called it *Illeity*, the "third person," the uncontainable, unrepresentable "Infinite" passing itself by me in the moment of taking ethical responsibility for the Other. In that disruptive encounter, both the self and the knowledge one possesses are broken open and rendered truer to the degree that they are submitted to moral responsibility. Levinas argued that knowledge, language, and concepts must always return to encounters with others, specifically suffering others; that is what it means to bear witness to the other. German theologian Karl Barth called it Revelation, God's self-revealing in Jesus Christ. This is a Revelation that enfolds a No within a larger and wider Yes: Revelation speaks a No to the idolatrous colonizer of nature in order to ultimately speak a much larger Yes to creaturely freedom. In Barth's account, witness names the hinge point between divine action and human response: Human speech and action are truer to the degree that they are testimony to the self-witnessing speech and action of the Word of God.

For each of these influential thinkers, their significant differences aside, this third person was seen to be active in the moment of bearing witness, forming what we could call a testimonial community of the at-least-three: self, other, and the third. Absent this third, subjects and objects, humans and nature, self and other remain in various confusing and often violent forms of entanglement.[108] An encounter with this third person disrupts those forms of human knowing that bear the fruit of totalitarianism, racism, colonialism, and, I would add, extractivism. Becoming a

[108] Lest this third be mistaken as suturing up the fragmented subject of Western Man, appealing to the third, rather, offers no clarity of insight into reality. In fact, this third appears more often to destabilize than to shore up.

witness to this third person in time is the beginning of knowing well and acting well. It puts the concern for moral witness before any concern for empirical witness. The third person disrupts what we think we know about the world in order to draw us into a renewed ethical relation to the others—human and otherkind—with whom we share damaged air, soil, and water.

Citizen science, when done as a practice of restorative truth-telling, can hold our scientific knowledge accountable to this in-breaking of the third person who disrupts our settled dichotomies and renders them accountable to the moral relations that pertain when creatures encounter and take responsibility for one another. It can hold our knowledge open to the excess stemming from the fact that we are creatures merely attending to, and trying to understand our relations to, other creatures to whom we are responsible. The sciences are no more than this. They are also no less. At their best, they aid our ability to live well as creatures in the midst of other creatures and before the Creator.

C. Missional Witness

Finally, Restoring Eden's model of citizen science is also marked by a missiological, theological sense of witness as response to God's calling in the midst of an ecopolitical order bound to false sacrifice. The missiological element, not the self-sacrificial element of martyrdom, thus orients the character of citizen science as response to God's call. In other words, the martyrological sense of witness—the giving of one's life over to death in the name of commitment to a higher truth—belongs within a wider, missiological conception of witness.

By collecting useful, empirical data to generate power for environmental justice and making the data collection process itself a school of neighbor love, Restoring Eden sought ultimately to point people toward the truth of the world: This world is the creation that God loves and toward which God moves. God shows what love for creation is by moving toward it in life-

giving mission. And if God moves earthward—"thy kingdom come … on earth as in heaven"—then so should those who live in free response to this God. Yet this is still too abstract, for God in Christ revealed the character of God's earthward movement when moving toward particular places and persons. God took flesh among an oppressed, dispersed people under foreign occupation, among a family in the backwaters of Israel dodging a king's murderous jealousy. God moved toward the ritually unclean, the sinners, the sick, the disheartened, the foreigners, and the lame to bring them life in all its dimensions—social, spiritual, material, biological. God moved even toward the dead, raising them to new life. This life-giving movement toward the dead, according to the Gospel of John, was the immediate cause of the plot to arrest and kill Jesus as a way to preserve a sub-par religio-political order. All of this movement toward the dis-membered and defiled led Jesus eventually to a sacrifice zone outside the gates, where he was crucified by those he came to save. In God's economy, however, that false sacrifice was transformed into a once-for-all true sacrifice that overcame sin, thus bearing witness to a form of love that both unmasks false sacrifice for what it is and gives life to the world.

This gift of divine life to the world was first and foremost a calling to positively participate in and actively bear witness to that life so that it might also be communicated to others in an expanding economy of witnesses. It was not primarily a call to repeat God's life-giving self-sacrifice. It was primarily a call to repeat God's movement toward the falsely sacrificed and suffering creatures who "bear the burden of the sin that destroyed them bit by bit in life, and wiped them out forever in death," as Jon Sobrino theologically described these slowly sacrificed and suffering.[109] The call to life-giving ministry, however, is certainly fraught with risk. Those who actively pursue life-giving witness open themselves to the regimes of death that consolidate

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[109] Jon Sobrino, *Witnesses to the Kingdom: The Martyrs of El Salvador and the Crucified Peoples* (Maryknoll, NY: Orbis Books, 2003), 5.

their own power by claiming sovereignty over life and controlling others through the fear of death.

The Restoring Eden projects reveal the weighty reality of witness's martyrological element. When they moved toward coal's sacrifice zones in Appalachia, Restoring Eden found many already assembling there, bearing witness to the reality of God as it confronts the reality of the world. Maria Gunnoe, the Appalachian resident-cum-activist, found her dogs murdered and her car's gas tank filled with sand. Some residents wore bullet-proof vests, others determined never to travel in a car with their loved ones, all for fear of what the coal industry and their supporters are known to do to their critics. Apart from a lack of funding, the major obstacle that kept erstwhile interested researchers from studying the community health effects of coal mining was the coal industry's reputation for burying its critics either underground or, more commonly, under a pile of legal fees, paperwork, and reputation assassination.[110] Peter himself was ejected from one county by a sheriff who refused to allow anti-coal activity within his jurisdiction.[111] Restoring Eden found more of the same in Birmingham: a critic of the local coal industry whose house was set aflame by a mysterious power surge, a journalist who received threats against her children after she brought public attention to health issues in North Birmingham. As Paul Scherz put it, "Structural conditions have made truth-speaking in public interest science increasingly

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[110] In fact, this is exactly what some in the coal industry sought to do to Hendryx. An article in *Science* summarized the findings of a report by the Union of Concerned Scientists and pointed to Hendryx's case as an instance of corporations using the Freedom of Information Act to harass and intimidate scientists: "In another example, the Highland Mining Company in 2012 filed open records requests seeking raw data, documents, and peer-review comments on the work of Michael Hendryx, formerly of West Virginia University and now at Indiana University, 'who had investigated connections between mountaintop removal mining and adverse health effects such as cancer,' the report states. When the university refused to provide all requested documents, the company took it to court, but the court sided with the university." Puneet Kollipara, "Open Records Laws Becoming Vehicle for Harassing Academic Researchers, Report Warns," *Science*, February 13, 2015, DOI: 10.1126/science.aaa7856.

[111] After consulting his son, a police officer, Peter returned to the sheriff's office with a copy of the county ordinances and asked where it stipulated that they could not carry out health research in the county. The sheriff knew he had no power to stop them. He simply demanded that they not cause trouble.

risky."[112] Herein lies a positive, theological understanding of sacrifice as forms of speech and action that bear witness to Christ's singular life-giving sacrifice. Truth-speaking is a life-giving sacrificial act, but, because Truth is a person on trial, it is marked this side of the eschaton by the risk of martyrdom.[113]

However, even though restorative truth-telling is a risky form of witness, it should not be equated with, or overdetermined by, the concept of martyrdom, as if martyrdom was the most authentic form of Christian witness. When Christian witnesses confront worldly economies that oppose Christ's life-giving work, those worldly economies may double down on their own self-posited authority and rule over others through the fear of death, thus producing martyrs (who are killed for refusing to fear false authority), or they may be converted to serve Christ by bearing witness to God's life-giving economy, the divine political ecology.[114]

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[112] Paul Scherz, "The Legal Suppression of Scientific Data and the Christian Virtue of *Parrhesia*," *Journal of the Society of Christian Ethics* 35, no. 2 (Fall/Winter 2015): 177.

[113] See John 18:37. Paul Ricoeur sees this theme of Jesus on trial before Pilate as the coming together of empirical and theological senses of witness. Ricoeur argues that both testimony's "external" elements of narrative, that is, its empirical attention to history and events, and testimony's "internal" elements of confession and expression of a self-involving truth are drawn together in the New Testament motif of the Great Trial, where God is both Judge and accused. When Truth is on trial, as it is in John's Gospel, the empirical and the theological become inseparable dimensions of truthful testimony. Paul Ricoeur, "The Hermeneutics of Testimony," in *Essays on Biblical Interpretation*, ed. Lewis S. Mudge (Philadelphia: Fortress Press, 1980) 119-54.

[114] The conception of witness I outline here echoes Oliver O'Donovan's critique of Stanley Hauerwas's account of Christian political witness. In Haurwas's estimation, "The fundamental form of witness by Christians is called martyrdom." Stanley Hauerwas, *Approaching the End: Eschatological Reflection on Church, Politics, and Life* (2014), 59 (the following parenthetical references in this footnote are from this text). Whereas in Hauerwas's work on martyrdom determines the character of Christian political witness, O'Donovan argues from history that when Christians confront worldly opposition, the confrontation "may lead to martyrdom, or to mutual service." Oliver O'Donovan, *The Desire of the Nations: Rediscovering the Roots of Political Theology* (Cambridge: Cambridge University Press, 1996), 217. In other words, while Christian witness may always carry the risk of persecution and martyrdom, these do not determine the shape of Christian witness; rather, the church's witness to Christ's just lordship and his life-giving priesthood may also result in transformation, that is, conversion. However, apart from his martyrological conception of witness, and the sharp church-world distinction that undergirds it, Hauerwas presents an account of witness that largely resonates with my account, especially when he writes, "All that is witnesses to God by acknowledging that all that is is created" (38); and, "To witness is to speak the truth about the world as God's, that is the God of Israel, the same God who raised Christ from the dead—of which we are witnesses" (42). Hauerwas's account of witness also stands in stark contrast to the modern

The Restoring Eden projects lend support to an integrated account of witness, including its openness to discovering God at work converting creatures from false to true witness in every corner of the fallen world. The Restoring Eden projects recognized no dichotomy between faithful witness and effective witness or between theological and empirical truth. Rather, they pursued a faithful and effective project that could open up public forms of environmental practical reasoning by making the true (human and otherkind) costs of coal part of the math of justice. Peter, for instance, had no difficulty seeing an atheist scientist raised up by God become a courageous witness to the forces creating Appalachia's sacrifice zones. Just the opposite, his entire theory of organizing depended on this Creating God raising up witnesses in even the unlikeliest of corners. Peter was not unique in this. For instance, at a meeting of the "Truth Out Campaign" organized by pastors in Birmingham to draw attention to the suppression of environmental health knowledge in North Birmingham, one Adventist pastor saw possibilities for conversion even among the false sacrificers. Rather than glory in an elected official's comeuppance for his participation in the bribery scheme, the pastor sought to figure out how

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project of epistemology that was "an attempt to escape contingency by supposing theoretical reason could entirely substitute for the work of practical reason" (41-42). But truth-telling and truthful living cannot be squared with this kind of escapist epistemology. The attempt to ground knowledge and action in theoretical reason was not a flight from contingency to truth; just the opposite. "Theology is first and foremost an exercise in practical reason" because "the truth it is about involves us as creatures of God" (42-43). And "witness to the Christ always requires that the one who witnesses is him- or herself drawn up into the message" (50). Communicating the message is always particular and always takes place in concrete encounter: "As necessarily particular, the language of witness must engage and converse with the concrete other" (55). In addition to requiring concrete encounters, truth is also participatory: "we cannot speak this truth without it having worked truthfully in us. Speaker and what is spoken cannot be separated if Christians' claims about God and God's world have the purchase of truth." And thus I can wholeheartedly agree with Hauerwas's conclusion that "'Witness' is the crucial grammar that upholds and enfolds these claims" (43).

Oliver Robinson, the convicted official, might work out his repentance by taking the lead in setting things right in North Birmingham.[115]

As a practice in restorative truth-telling, citizen science bears witness before the world that it is set free from sin and open to transformation by the earthward movement of God's grace. It holds out hope that empirical truth can change sacrificial systems when it empowers concerted action for environmental justice. More specifically, it expects that God is already at work in extractivism's sacrifice zones raising up witnesses to the life-giving political ecology of God.

Conclusion

In this chapter, I drew together the analysis and theological interpretation developed in earlier chapters both to show that science is caught up in rival political ecologies of sacrifice and to argue that citizen science as restorative truth-telling is a Christian practice suited to our time of increasing, intensifying, and multiplying sacrifice zones. If science and society are constituted by rival logics of sacrifice, then we need examples of how to do science in a way that both supports democratization amid deep human plurality and bears witness to the earth's sacrifice zones as the object of God's transformative action, that is, as the destination of God's redemptive movement. As it is God's character to move toward the sacrificed, so it ought to be our human and Christian character to move toward sacrifice zones; these are the preferred sites of ecopolitical witness. Citizen science as a practice in restorative truth-telling is one powerful way to move toward extractivism's sacrifice zones, discern where God is already present there, and open them up to transformation.

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[115] Fieldnotes, 10/3/18.

Conclusion

I began this dissertation with two questions. The first question derived from my encounters with extractive industries in Peru. While in the Peruvian Amazon, I finally learned why the highway in and out of the jungle had been recently paved and why public debates over the free trade agreement with the United States were so heated; one of the strongest forces remapping the country, driving its infrastructure development, and shaping political life had to do with extracting natural resources like hydrocarbons, gold, and sand primarily for foreign markets. What I thought was a footpath through the jungle was actually a dirt road for dump trucks to haul sand to market to be transformed into concrete to build Peru's future. In the name of an extractivist agenda, lands were degraded, indigenous groups dispossessed, and land defenders assassinated. Ethnic, religious, and social groups were divided over these issues. Some Catholics collaborated with Pentecostals who collaborated with indigenous leaders to protect their land rights; others collaborated with extractive industries. Sides were drawn, challenged, and redrawn. And conflicts erupted at highways, mines, and government buildings. The political ecology was changing quickly as a new era of extractivist and anti-extractivist coalitions formed, broke down, and reformed with old and new religious groups, indigenous groups, peasants, and political parties on all sides. Only later did I learn to call the places at the beating heart of this changing political ecology "sacrifice zones." But even before I had the language to fully form the question, I was asking what Christians ought to say and do amid this kind of political economy that seemed to be reproducing itself in patterned ways across the planet. We who trust that God's creative and redemptive work is the truth of reality, what should we do when, through our lifestyles and consumption habits, we regularly and anonymously participate in making sacrifice zones in any place that is either abundant in valuable natural resources or in land for storing all the waste we

generate? How might we bear witness to God's life-giving economy of creation and salvation in the midst of a death-dealing economy of extraction and waste that promises salvation to its beneficiaries while concealing, naturalizing, and justifying the costs that salvation requires?

This was the "Big Question" I kept in mind throughout this study, sometimes putting it front and center, sometimes keeping it in the background. It was the normative question: What should we do amid this state of affairs?

Instead of relying only on moral theology's conventional hermeneutical and historical methods to answer this question, however, I approached it ethnographically. I responded through observing and participating in a community of people who were responding to a similar question in practice and at a much smaller scale. This was the community that formed around Restoring Eden's citizen science projects in West Virginia, Kentucky, Virginia, Chicago, and Birmingham. This was a community of creation care leaders, young volunteers, scientists, residents, journalists, pastors, environmental activists, and land defenders that formed around the shared norms and practices they developed in a number of coal's sacrifice zones in the United States. What initially attracted me about these projects was the vehement and immediate opposition they generated from the eastern coal industry and its allies. What could possibly be so threatening about a seemingly insignificant group of people collecting and publishing community health data? As I quickly learned, that data made coal's costs visible in a way that threatened the highly mechanized and permanently destructive mining methods that coal companies had come to rely on. It was much easier for pro-coal spokespersons to ostracize their opponents when they could paint them as morally absurd "tree huggers" and cultural "outsiders" who loved "the environment" more than the jobs and the economy Appalachia's people relied on for their livelihood. It became significantly more difficult to ostracize people who were angry about life-

debilitating birth defects, life-ending cancers, and other chronic maladies that made life miserable for those whose interests industry spokespersons claimed to serve.

So I examined my "Big Question" by asking a "Small Question." Really, it was a series of descriptive questions. The primary one was, how did the Restoring Eden projects integrate Christian faith, environmental justice, and science? Within this also were two sub-questions: How did the projects come about? And what impact did they have on the issues they sought to address? These were questions I sought to answer with ethnographic methods of participant observation, informal conversations, interviews, and the collection and analysis of documents. These constituted the archive that forms the basis and source of my moral deliberation. By answering these questions, I derived concepts from my fieldwork to explore and respond to my "Big Question."

As I explored throughout the dissertation, the Restoring Eden projects integrated faith, environmental concern, justice, and science through the concepts of creation, sacrifice, truth-telling, and witness. They responded to what they perceived as the false sacrifice of human and otherkind creatures through developing a form of ecopolitical witness Peter called "citizen science as restorative truth-telling." In the absence of authoritative, scientific knowledge about the true costs of coal mining and coal burning, the Restoring Eden projects produced the kind of knowledge they thought might be powerful enough to change the terms of debate in, for instance, the courts of law and public opinion. New knowledge with the stamp of scientific authority could thus shift the burden of proof onto the coal industry to prove that they were not profiting off the sacrifice of anyone who inhabits coal's sacrifice zones.

With respect to the second question, I showed that these projects came about through the affective, cultural, and confrontational approach to Christian environmental action that Peter developed based on his own encounter with the God who loves creation while reading Proverbs

31 in a Pacific Northwest clearcut. That reading illuminated an encounter he had had with elk the previous night, who, together with their Creator, called Peter to love, serve, and protect actual places and habitats from death by extraction. Through Restoring Eden, the organization he subsequently founded, Peter committed himself to speaking the truth about the places he, and other people, loved. Decades later, after his encounter with mountaintop removal, a terminal cancer diagnosis, and his decision to formally dissolve his organization, he developed Appalachia witness tours that eventually morphed into volunteer-driven door-to-door health studies. Through these projects, Restoring Eden wove together empirical observation, moral formation, and Christian vocation into the technology of truthful testimony they called "citizen science as restorative truth-telling." The goals were threefold: to produce knowledge communities could use to contest mountaintop removal; create morally formative encounters between young volunteers and the residents who lived in coal's sacrifice zones; and ultimately convert people, primarily the volunteers themselves, to the God who loves creation and calls us to do so as well.

In response to the third question, I have shown that while the full impact of these projects cannot yet be fully assessed, there is evidence that suggests they were successful in several ways. The projects played a significant role in shifting public debates about coal mining; in their testimonies, many of the participants specified ways they were morally shaped by their involvement with the projects; the coal industry received them as an existential threat worth investing millions of dollars to combat; and, while it would be impossible to try to measure the success of their missional witness, they left a concrete example of what it can look like in our "knowledge society" to integrate, in one set of practices, care of creation, love of God, and love of neighbor.

I brought these descriptive answers to my "Small Question" into conversation with my "Big Question" by exploring in every chapter how these projects related to and suggested

interpretive frameworks for understanding wider dynamics in contemporary politics, ecology, science, and religion. In chapter one, I argued that the organizers of the Restoring Eden projects wisely discerned that the production of knowledge was an urgent and underexamined aspect of environmental practical reasoning. They rightly recognized both that environmental knowledge was a condition and possibility for coming to public judgment on environmental issues and that too little environmental knowledge was produced with and for the inhabitants of sacrifice zones. So they democratized environmental knowledge by enabling erstwhile watchers—that is, non-scientists whose anecdotal and local knowledges fail to meet the publicly authorized standards of science—to become authoritative, agential witnesses to coal's true costs. I used this analysis to shed light on my own use of ethnographic methods in this project in moral theology, conceptualizing ethnographic theology as a practice in witnessing witnesses to aid and multiply witnesses. In other words, my case study of the Restoring Eden projects could provide me with a way to enrich theological and political-ecological concepts to develop an account of environmental practical reasoning that might aid Christian witness amid sacrifice zones.

In the second chapter, I shifted my attention to Sarah, a volunteer with the Restoring Eden projects who worked her way up to become a trainer in the Appalachia projects and then a coordinator of the Birmingham project. I examined the reason she gave for journeying from Central Appalachia to Birmingham: because people in both areas were being treated like "sacrificable communities" even though they are not "expendable people." Though Peter often spoke of the projects as a response to "the true costs of coal," I argued that Sarah, a Baptist, developed a more theologically astute description of these costs as "sacrifices," or, more precisely, as false sacrifices that go against the revealed truth that people are never to be treated as expendable to secure some greater good. She thus drew attention to and opposed the logic that produces "sacrifice zones." I then explored that logic through providing a genealogy of the

concept of a sacrifice zone as it moved from the domain of land and livestock management to that of environmental justice. In the midst of the energy crises of the 1970s, an unlikely and loose coalition of ranchers and indigenous groups in the Western states refused to be "Appalachianized," that is, the victims of a national sacrifice. The concept later returned to Appalachia, amid the rise of mountaintop removal in the late 1990s, after becoming a central concept of environmental justice through the work of primarily Black and indigenous scholars and activists. I argued both that the places where Restoring Eden carried out their projects are rightly called "sacrifice zones" and, following one Appalachian activist's proposal that Appalachia be transformed from a sacrifice zone into a sacred zone, that these sacrifice zones should be thought of as sites of tension and contestation between rival political ecologies of sacrifice.

The third and fourth chapters were hermeneutical in focus. If the sacrifice zones in Central Appalachia, Chicago, and Birmingham are indeed sites of conflict between rival political ecologies of sacrifice, in these chapters I asked how we should understand these rival ecologies. I developed my hermeneutical categories through analysis of a visit by the Birmingham team to the Equal Justice Initiative's (EJI) museum and lynching memorial in Montgomery, Alabama. This was when Peter adapted EJI's concept of "restorative truth-telling" to the citizen science projects. In chapter three, I reflected in particular on the analogies between lynching and environmental injustice as two forms of false sacrifice. On the one hand, I drew on Latin American scholars who theorize extractivism as an ecopolitical theology and, on the other, Augustine's two-cities political hermeneutic of sacrifice to argue that one of the political ecologies of sacrifice operating in sacrifice zones should be understood as the dis-membering of creatures from the community of life. Extractivist political ecologies apportion life and death to creatures and habitats in a way that functions like a salvation story. Extractivism promises a kind of salvation understood as an ability

to control the future and prolong one's life—whether understood in terms of Christianization, development, progress, or even sustainability—by sacrificing some creatures and habitats. In fact, extractivism variously naturalizes, justifies, and/or invisibilizes these sacrifices. I argued further that if I was right to theorize one of the rival ecologies as a political ecology of false sacrifice, then Rob Nixon's analytic concept of environmental injustice as "slow violence" is better understood as "slow sacrifice." In this case, the challenge for activists, writers, and scholars is to represent these processes of slow sacrifice in ways that catalyze resistance and transformation.

I turned in the fourth chapter to the other rival ecology of sacrifice, represented by the citizen science projects, by reflecting on the Restoring Eden team's engagement with Christ's cross while visiting EJI's lynching memorial. As in Augustine's two-cities hermeneutic, I contrasted the false sacrifice of Cain with the true sacrifice of Jesus Christ, who moved toward the false sacrifice zone of Golgotha and transformed it into the site of the one true sacrifice that gave life to the world. I foregrounded Karl Barth's atonement theology, as conceptualized in the priestly terms of Israel's cultic life, as Christ's dying the death of the dis-membered human who inhabited a defiled ecology in order to restore the life-giving air and space that nurtures the new life of the creature. I argued that as God moves toward sacrifice zones to transform them into sacred zones, where the dis-membered are re-membered to the community of life, it is the priestly vocation of the human to bear witness to God's work by doing likewise. In this sense, the Restoring Eden projects should be understood in relation to this rival ecology of *sacrafice*; the projects also stand within a tradition of responding to false sacrifices with technologies of truthful testimony, as was done by Bartolome de las Casas and Ida B. Wells-Barnett. With this argument, I challenged the notion that truth-telling is only a "prophetic" work of "speaking truth to power," as if truth and power were on two sides of an endless contest. Rather, truth-telling is itself a way to build power to contest projects that sacrifice some lives and lands in order to secure and

prolong their own by seeking to control the future. The concept of sacrifice, while much maligned in contemporary theology and ethics, is, according to my framework, an ineliminable, core concept for Christian ecopolitical witness: Because God goes about the work of transforming death-dealing sacrifice zones into life-giving sacred zones, so should we.

Finally, I returned in chapter five to the epistemological issues I raised in the first chapter and examined them in light of the two-political-ecologies hermeneutic I developed in the intervening chapters. I made a descriptive, theoretical argument that science—scientific practices, institutions, and knowledges—is caught up in these rival political ecologies of sacrifice. I suggested that, when it comes to environmental problems, we cannot simply "follow the science." At best, "following the science" is an inadequate theory of environmental practical reasoning; at worst, it is dangerously naive about science's complicity in producing, naturalizing, and invisibilizing sacrifice zones. It fails to understand that science and society are co-produced in relation to rival logics of sacrifice. For instance, the modern sciences evolved together with the development and extension of extractivism into all corners of the earth through state and market projects. Science, particularly when it has been held accountable to social life through democratizing forms like citizen science, has also been used in more recent decades to contest extractivism's false sacrifices. Applying my two-political-ecologies framework, I argued that science can be done for "secularist" purposes—by aiding extractivism and by setting science up as a neutral form of knowledge—or for the pursuit of "secularity," a time when profoundly different creatures can discover and harness a latent commons that bears witness to God's economy of creation and salvation. I thus recommended citizen science, when it is practiced as a form of restorative truth-telling, as a Christian practice uniquely suited to our time of expanding, intensifying, and multiplying sacrifice zones. The defining feature of this kind of citizen science is not the fact that "lay" individuals assist "professional" scientists with data collection but that

membership in the community of life follows the pattern of God's work in Christ and the Spirit rather than the pattern of clericalisms, old and new. In other words, it puts science to work re-membering creatures to the community of life, in part, by democratizing knowledge and enabling erstwhile watchers to become witnesses.

What are some of the implications of this study? I will briefly name three of them, two of which are contributions to Christian life and thought and one of which is intended as a contribution to environmental analysis in general.

First, my study can further the long Christian tradition of affirming an essential link between love and knowledge in a moral epistemology. According to this tradition, Christian epistemology, far from lending support to idealized notions of objectivity and impartial observation, is participatory, personal, partial, and communicative. Augustine provided the classical articulation of this position when he adapted Platonist thought about the Good to Christian thought about the essential relationship between the love of God, the love of neighbor, and the love of all things, which, if they exist at all, participate in the goodness of creation.[1] I would argue that the same position could be developed with other, non-Platonist metaphysics. Regardless, in this traditional conception, because knowledge is self-involving and partial, it leaves the creaturely knower more responsible and loving than before. This was the primary point

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[1] The classic touchstone is Augustine, *De Doctrina Christiana*, I.22-29. James Peters calls Augustine's an "epistemology of the heart." According to Peters, "Augustine's epistemology for knowing nature is inseparable from his epistemology for knowing God Himself, who so loved the world that He sent his son into our broken world in order to redeem it and show us the 'face of God' (Psalm 105:4). The connection between these forms of knowledge, perhaps surprisingly, is that knowledge of any reality—God, other persons, or nonhuman nature—is available to us only through love (*caritas*)." Even more, "[T]he linchpin connecting all three forms of knowledge—knowledge of God, of neighbor, and of creation—is that all these knowable realities have inherent value and are not just bare facts of a meaningless cosmos. As Augustine notes in *On Christian Doctrine*, '[H]e lives in justice and sanctity who is an unprejudiced assessor of the intrinsic value of things. He is a man who has ordinate love.' To seek to know God, the human other, or any part of creation from the standpoint of a disinterested spectator or of a manipulative exploiter, is nothing less than a failure of virtue." James R. Peters, "Saint Augustine: Patron Saint of the Environment?," in *Augustine and the Environment*, eds. John Doody, Kim Paffenroth, and Mark Smillie (New York: Lexington Books, 2016), 130-32.

of holding a generative tension between the cognitive and affective aspects of knowing.[2] Early Christians rightly borrowed the Greek concept of *theoria* to name a way of knowing that involves the knower in a particular kind of life (*ethos*) and way of formation (*askesis*).[3] When the created world given to be known is always already a good world, then knowing and loving it are indistinguishable, which is also to recognize the damage of knowing and loving its goods falsely, in a disordered way. The problem stems, in other words, from loving creatures the wrong way, as if they, rather than God, were the source and end of good life.[4] Oliver O'Donovan articulates the moral dimension of this position well while reflecting on Proverbs: The created world "has the resources to call us," to invite us to learn about it, which is really "God's call [that] reaches us only *through* the created world and as we are participators in it."[5] In O'Donovan's account, it is the creating and redeeming God who authorizes the social and natural world to mediate the moral authority capable of calling individuals and societies into forms of responsibility, summoning them to answer for what they have come to know. My study suggests how this epistemology could be furthered to fully incorporate the love and knowledge of otherkind creatures with the love and knowledge of God and neighbors vis-à-vis modern scientific practices and institutions.[6]

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[2] These cognitive and affective aspects were sometimes spoken of as if they were two distinguishable-but-related reasoning faculties of intellect and will, though this was by no means the only or even most helpful way of conceiving them.

[3] Norman Wirzba, "Christian *Theoria Physike*: On Learning to See Creation," *Modern Theology* 32, no. 2 (April 2016): 213.

[4] For an examination of Augustine on this point, see Mark Wiebe, "A Green Augustine: What Augustinian Theology Can Contribute to Eco-theology," in *Augustine and the Environment*, eds. John Doody, Kim Paffenroth, and Mark Smillie (New York: Lexington Books, 2016), 181-195.

[5] Oliver O'Donovan, *Finding and Seeking: Ethics as Theology, Volume 2* (Grand Rapids, MI: W.B. Eerdmans Publishing Co., 2014), 100-01 (emphasis original).

[6] Such a project could benefit also from engaging Jurgen Moltmann's work on a communicative epistemology. For instance, he argues, as I have, that knowledge and life should be woven together. "To be alive means existing in relationship with other people and things. Life is communication in communion. And, conversely, isolation and lack of relationship means death for all living things. … So if we want to understand what is real *as* real, and what is living *as* living, we have to know it in its own primal and individual community, in its relationships, interconnections and surroundings" (emphasis original). When this is done, "the concern that motivates cognition changes. We no longer desire to know in order to

It could also be brought into closer conversation with contemporary philosophical debates in the epistemology of testimony, debates in which Augustine features as a watershed figure.[7]

Second, this study suggests the generative possibilities for Christian witness opened up by a renewed engagement, in our eco-conscious age, with the early church theology of the divine economy. In particular, my study can be brought into fruitful engagement with the historical-theological work of Paul Blowers on the doctrine of the divine *oikonomia*, a biblically derived concept developed by the early church to thoroughly integrate creation and redemption so that "divine creation was confessed not in isolation but in a normative relation to God's overall salvific action in the world."[8] Actually, the previous point about love and knowledge was closely connected in the early church to this theology of God's *oikonomia*: The goal of lovingly knowing creation was participation in the drama of the unfolding economy of creation and salvation.[9] In contrast to how creation and salvation are often bifurcated in contemporary proclamation and witness, Christology and soteriology were "a focusing lens … in the early Christian vision of

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dominate, or analyse and reduce in order to reconstruct. Our purpose is now to perceive in order to participate, and to enter into the mutual relationships of the living thing. Integrating and integral thinking serves to generate the community between human beings and nature which is necessary and promotes life." Elsewhere he states, "True knowing does not desire to dominate what is known in order to possess it. It wants to arrive at community with the object of its knowledge. True knowing is communicative knowing. It extends as far as the love which respects the independence of others, and loves them in their very difference, for their own sake. The highest form of communicative knowing is loving union (Gen. 4.1)." Jurgen Moltmann, *God in Creation: A New Theology of Creation and the Spirit of God*, trans. Margaret Kohl (Minneapolis: Fortress Press, 1993), 3, 69-70.

[7] Augustine is widely recognized as the first figure in Western thought to affirm testimony as an authentic source of knowledge. See, for example, the work of Matthew Kent Siebert, "Augustine's Development on Testimonial Knowledge," *Journal of the History of Philosophy* 56, no. 2. (Apr 2018): 215-237; and Peter King and Nathan Ballantyne, "Augustine on Testimony," *Canadian Journal of Philosophy* 39, no. 2 (June 2009): 195-214.

[8] Paul Blowers, *Drama of the Divine Economy: Creator and Creation in Early Christian Theology and Piety* (New York: Oxford University Press, 2012), 2.

[9] Blowers makes the point well when he affirms that the aspiration of the early church's *theoria physike* (knowledge or contemplation of nature) was "to a higher 'vision' of the world in the Creator's purposes such as would draw the believer all the more into the drama of the oikonomia." Ibid., 15.

creation."[10] Even closer to my purposes in this dissertation, Blowers shows that this early vision of creation was not borne of philosophical speculation about cosmology or cosmogony, or even about anthropology, so much as it was borne of controversy and contention over rival teachings about salvation, particularly Gnostic and Marcionite soteriologies.[11] In diverse ways, these latter economies drove a wedge between the material world and the realm of salvation.[12] Irenaeus's influential doctrine of recapitulation, an essential aspect of the divine *oikonomia*, was a direct response to these rival economies and the ethics, liturgical forms, and practices they manifested. According to Blowers, "The earliest Christian doctrine of Creator and creation took shape in the context of [a] 'fuller exposition' of the divine economy, filling out the interconnections between creation and redemption so as to edify Christian ritual, catechesis, and religious devotion while also answering the rival worldviews of Gnosticism, Marcionism, and the various constructs of Greco-Roman philosophical cosmology."[13] The doctrine of the divine economy of creation and salvation differed not only from rival salvation stories in the ancient world; it also differs from more contemporary accounts of God's salvation-historical work that figure that work as stages in a linear historical continuum from creation to fall to rescue to consummation. Rather, the *oikonomia* refers to a complex layering better understood with the aid of musical analogies, like a "harmonic thickness."[14] Creation, in other words, does not stand back behind a fall that took place

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[10] Ibid., 2.

[11] Ibid., 67-100.

[12] They did so either in characteristically Gnostic ways, which narrated salvation as rescue from a material world that was either inherently evil or vulnerable to malicious demiurges, or Marcionite ways, which in supersessionist and antinomian fashion figured the God of the New Testament (a god of grace) as offering salvation from the God of the Old Testament (a god of law).

[13] Ibid., 98.

[14] Blowers quotes Stephen Crites: "Perhaps a musical analogy might better express this intercommunication of narrative patterns: each new melodic movement recalling or anticipating others, and containing their thematic material in its harmonic thickness." Cited in Blowers, *Drama*, 97.

at a definite time in history; rather, God never ceases creating, even when God is saving, redeeming, and consummating creation.

It should be clear by now how my study could inform renewed engagement with this biblical and early church teaching. I argued that extractivism functions like a very powerful and global salvation story: It is an economy that promises salvation—variously figured as progress, development, sustainability, etc.—so long as we come to peace with the sacrifices of lives and lands that it requires, that is, so long as we render creation—creatures—sacrificable. Against an extractivist economy of this sort, bifurcated accounts of creation and salvation are powerless; actually, they may aid and abet extractivist economies. By bifurcated accounts I have in mind forms of Christian proclamation and witness that portray salvation—understood as afterlife, rescue from sin, internal peace, etc.—as primary and matters of creation, such as creation care and stewardship, as, at best, matters of secondary importance. With bifurcated economies, care for the earth, cultivation of life-giving economies, and preservation of species are all things that Christians might do after primary matters of salvation, discipleship, and vocation are taken care of. If, as I have argued, the divine economy is always also a divine ecology—a drama, in other words, in which otherkind creatures are active participants and a community in which they are members—then there can be no sharp distinctions drawn between the economies of creation and salvation. The language I have suggested for Christian thought and practice that coheres with the doctrine of the divine economy/ecology of creation and salvation is ecopolitical witness: creatures are called to participate as prudential and active witnesses to God's creating and redeeming work, transforming sacrifice zones into sacred zones.

The third and final implication I will note here speaks to broader, urgent issues in environmental thought more generally: My study supports the conclusion that, with respect to a theory of action, an extractivism framework is better than a climate change framework. This is a

matter I have explored throughout this dissertation in terms of environmental practical reasoning. When we move back and forth between our descriptions of environmental problems, on the one hand, including the meaning we ascribe to them and our discernments about who and what deserves moral attention, and, on the other hand, our proposals for what is to be done to address them, and by whom, we are engaging in environmental practical reasoning. Climate change is a way of framing and theorizing global environmental problems that foregrounds some things, backgrounds others, and leaves still others invisible. This is not unique to climate change theory; every theory does this in characteristic ways.[15] Yet, the characteristic ways climate change describes environmental problems, ascribes meaning to them, assigns culpability and responsibility, establishes norms, and proposes effective solutions is deeply flawed. It is technocratic and elitist in nature. It sets up scientists, engineers, and international governance regimes as the key agents of climate action. For the rest of us, our job is to try to get our politicians to follow these primary agents' directives. This is the idea behind "following the science" and the related notion that we already have the knowledge and technology to address climate change, if only there were the political will.

The ecopolitical witness framework that I developed in this dissertation can be contrasted with this predominant framework that focuses our ethical and political attention on global climate change. Climate change's framework for environmental practical reasoning draws public attention to a range of abstract objects and arcane knowledges, including, for example, CO_2 in the atmosphere, expert scientists, technocratic regulatory regimes, distant futures, faraway glaciers, etc. Not only does it draw our attention beyond the more proximate realms in which we experience and interact in an interdependent way with other creatures, but it also advances any

[15] For example, critical race theory characteristically draws attention to oppressive structures rather than individuals and liberal economic theory characteristically draws attention to individual behaviors in markets rather than structures.

number of technical, policy, and business solutions that do nothing to challenge the fundamental structures of a political ecology of false sacrifice. Worse, proposed solutions may even provide the basis for sustaining extractivist political ecologies, and the sacrifice zones they produce, for as long as possible.

I am certainly not the first to express suspicion about climate change as the best way to frame environmental problems and solutions. For instance, climate justice activists have tried to redeem a faulty climate change framework by shifting its focus toward those groups that are most vulnerable to a changing climate. Some have argued that many of the responses proposed by corporate, state, and international actors are various forms of "greenwashing." According to this logic, the language of sustainability is easily captured by state and market entities to consolidate power and increase profit, all the while contributing little to nothing in the way of actual solutions to environmental problems.

The writer Amitav Ghosh formulated the problem well when he contrasted the Paris Climate Agreement with Pope Francis's encyclical *Laudato Si*. In contrast to the latter, he stated, in the Paris Agreement, "there is not the slightest acknowledgment that something has gone wrong with our dominant paradigms; it contains no clause or article that could be interpreted as a critique of the practices that are known to have created the situation that the Agreement seeks to address. The current paradigm of perpetual growth is enshrined at the core of the text."[16] In contrast to the pope's incisive diagnosis of a "technocratic paradigm" that needs to be remedied with an "integral ecology," the Agreement uses language that confines, occludes, conceals, and withdraws. It appoints "champions," for instance, tellingly leaving the word undefined, implying "that the document's authors know tacitly whom they are referring to—and who could that be but

[16] Amitav Ghosh, *The Great Derangement: Climate Change and the Unthinkable* (Chicago: University of Chicago Press, 2016), 154.

others like themselves?"[17] In short, Ghosh thinks, "The Agreement's rhetoric serves to clarify much that it leaves unsaid: namely, that its intention, and the essence of what it has achieved, is to create yet another neo-liberal frontier where corporations, entrepreneurs, and public officials will be able to join forces in enriching each other." Further still, it "strips the victims of climate change of all possible claims to legal recompense for their losses."[18] Even its closing words are "an expression of faith in the sovereignty of Man and his ability to shape the future."[19] All of this is why Ghosh, who is not a Christian thinker, concludes that "the most promising development … is the increasing involvement of religious groups and leaders in the politics of climate change."[20] If the state and market entities that climate action seems to depend on are the very architects of the problem, then Ghosh wonders if perhaps religious groups can provide a vision of life, freedom, radical change, and the sacred that is unimaginable within the frames of our most powerful modern institutions.

In contrast to climate change theory, the ecopolitical witness framework I have developed resonates much more closely with extractivism theory's descriptions of and proposed responses to environmental problems. I developed my analysis, in particular, through engaging the work of a number of leading Latin American scholars who argue that extractivism is an ecopolitical theology that requires a theological analysis in addition to a political, economic, and ecological one. My two-political-ecologies hermeneutic frames environmental problems in terms of a co-production of nature and politics through rival logics of sacrifice. The Restoring Eden projects center extractivism's falsely sacrificed places in their practical reasoning about environmental

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[17] Ibid., 155.
[18] Ibid., 158.
[19] Ibid., 156.
[20] Ibid., 159.

action, making them the primary sites for developing and innovating contextual forms of Christian witness.

But what of climate change and its modes of environmental practical reasoning? Naomi Klein's book *This Changes Everything* is a point of contact between these two modes of environmental practical reasoning, because she combines extractivism theory and the concept of sacrifice zones with climate change theory, thus joining together what I have thus far set in contrast.

Klein manifests both the promise and the peril of translating the concept of extractivism for the Anglophone world. Like the Latin American originators of extractivism theory, she rightly associates it with a kind of "magical thinking." While not quite a religious phenomenon, she identifies it as a "habit of thought" and a "worldview" that, while it may have emerged from a particular economic model, is now embraced across the ideological spectrum. Furthermore, she argues that "extractivism is also connected to the notion of sacrifice zones—places that, to their extractors, somehow don't count and therefore can be poisoned, drained, or otherwise destroyed, for the supposed greater good of economic progress." In an apt turn of phrase, given my case study, she calls extractivism "the mentality of the mountaintop remover and the old-growth clear-cutter."[21] It is a mentality that only takes from the earth without taking care that it can regenerate future life. As perhaps the most prominent Anglophone theorist of extractivism, Klein's analysis is penetrating, generative, and beautiful. At many levels, it resonates with my analysis.

However, Klein awkwardly configures her critique of extractivism to fit the terms of a climate change humanism. Extractivism is a "logic that climate change calls profoundly into

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[21] Naomi Klein, *This Changes Everything: Capitalism vs. the Climate* (New York: Simon & Schuster, 2014), 169.

question," she asserts.[22] Not a matter of the heart, it is a "mentality" matched with a resource-depleting economic "model." In her genealogy, Francis Bacon is the "patron saint" of modern extractivism because his "biblically inspired framework" gave humans the right "to place ourselves above the ecosystems that support us and to abuse the earth as if it were an inanimate machine."[23] Furthermore, she claims that the greatest challenges to this framework come from outside its logic, primarily from indigenous worldviews. The tensions in her anti-theological position mount from there. Klein looks for solutions from what she identifies as "older" worldviews by looking spatially across to indigenous and other grassroots resistance efforts.[24] Yet when it comes to describing climate change as a problem, Klein ignores the descriptions put forward by the very groups she turns to for models of action, drawing almost exclusively on climate science and the kind of elite scientific institutions, methods, and instruments that Bacon could only fantasize about. Finally, she adds to this pairing together of an elite techno-scientific epistemology with social movement politics a throwback to the evangelicalism that fought to abolish the Atlantic slave trade. The best historical precedent she can find for a populist movement to change the economics of inequality is the abolition movement, the religious nature of which she understates as that movement is conscripted to be an analogue to her "unshakable belief" in humanity and equal human rights.[25]

Whether Klein uses our climate change moment to draw attention to extractivism theory or, vice versa, attempts to fit an extractivist analysis into a climate change framework, the two approaches do not fit together well.[26] Why? Because climate change theory gets us looking in all

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[22] Ibid.
[23] Ibid., 170, 177.
[24] Ibid., 177.
[25] Ibid., 462.
[26] Though unexplored here, the climate justice movement differs from the statist climate change approach in view here, which is driven by institutions such as the UNFCCC and IPCC.

the wrong directions. It asks us to look primarily at the hole in the sky and the hole in the future rather than the holes in the ground, in our societies, and in our hearts here and now.[27] It tells us to look up at the weather, and forward toward the future. It asks us to love not-yet-existing generations and to act now for their well-being. It is at pains to convince us, saying, "Look, climate change is in that drought, that storm, that wildfire, that pandemic! It's even in that cheeseburger! Did you see it?" Like the inverse of grace-perfecting-nature, it asks us to imagine something like an angry sky god rejecting all the CO_2 we're offering it, and, in its burning anger, haunts and intensifies otherwise naturally occurring weather events, all the while unleashing poisonous gases long frozen in the permafrost and menacing our coastlines with rising seas. But nobody can rightly interpret these demiurgic manifestations apart from the mediators who possess special forms of knowledge. By setting the terms of the problem, the mediators establish the boundaries for what solutions will be acceptable, reasonable, and appropriate. These global environmental problems described with global kinds of knowledge must have global technocratic solutions managed by global institutions. How could it be otherwise?

This admittedly ungenerous dramatization names some of the difficulties attending climate change theory. Solutions to the problems it describes all pass through the policy, technology, and/or cash nexus, none of which requires a converted heart, a changed society, or an end to extractivism. In fact, the two broad kinds of solutions climate change theory proposes—mitigation and adaptation—are both compatible with prolonging, even intensifying, false sacrifice zones. In the early 1980s, for instance, environmental justice became a movement when the state of North Carolina approved a plan to clean up polluted roadsides by dumping toxic PCB waste in rural, predominantly African American Warren County. The religious leaders in Warren County

[27] The hole in the sky is that in the ozone layer, which was one of the earliest ways scientists described global climatic changes and problems; those in the ground are mines, in our society inequalities, and in our heart the need for personal conversion.

recognized a need to shift from an ethics of Not In My Backyard to one of Not In Anybody's Backyard. By analogy, climate change theory, like the environmentalism that approved the placement of a toxic dump on top of Warren County's water source, makes the prolongation of environmental injustice possible, even acceptable. I am suggesting that climate change theory is necessary but insufficient, at best, and dangerous, at worst. By drawing our attention to morally distant objects and places (e.g. atmospheres and glaciers) and morally abstract temporalities (e.g. projected futures), it permits forms of climate action that potentially sustain the kinds of false sacrifices that constitute extractivist political ecologies here and now.

The tiny organization Restoring Eden and the various groups of people with whom they assembled in a small handful of coal's sacrifice zones, by contrast, point toward the merits of deepening and strengthening forms of environmental action that look not up and forward but inward, down, and around.[28] Such forms of action are fitting human responses to what Karl Barth called God's "earthward action," for God's grace is earthbound.[29] "Earth," says Barth, is "the goal and end of [God's] action," whereas its fellow creaturely realm of heaven is "the Whence, the starting-point" of the kingdom of God's earthward movement.[30] Whereas the moral abstractions of climate change theory make ripe conditions for the heart to produce and sacrifice to idols, getting to know and love those struggling to inhabit falsely sacrificed places is where a Christian ecopolitical witness ought to begin. The human's place is on earth, not in the sky, and the time given to her to act is at hand, not in even the most carefully projected future. As Jesus Christ transformed the false sacrifice of a Roman cross on a hill outside Jerusalem into the one

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[28] Restoring Eden is certainly not alone in innovating contextual forms of citizen science and popular, participatory research. However, they are the only group I know integrating citizen science with Christian witness.

[29] Karl Barth, *Church Dogmatics* III/3, ed. G.W. Bromiley and T.F. Torrance and trans. G.W. Bromiley and R.J. Ehrlich (Peabody, MA: Hendrickson Publishers, 1960), 432.

[30] Ibid., 431-33.

true sacrifice that freed God's beloved creatures to become fully alive in faith, love, and hope, Christians can trust that the Spirit of God is already active in today's sacrifice zones, raising up and empowering witnesses to God's earthbound kingdom. It is characteristic of the Spirit to do so—making Christ and his verdant kingdom present in the sacrifice zones outside the gate, making these the places of new creation.

The ecopolitical theology I am suggesting is critically Augustinian. As creatures of time and place, two garden-cities are intermingled in history, yet founded on fundamentally opposing sacrifices. One binds people and nature together in extractive relations through death-dealing false sacrifice, and the other binds them together in just, peaceable, and joy-filled relations by bearing witness in word and deed to Christ's true and life-giving sacrifice in his life and death. While human creatures can and must interpret between these two garden-cities, an effort greatly aided by theory, there is no foolproof hermeneutical key, only a need for time-bound, earthbound creatures to make contingent judgments regarding when, where, and among whom the Spirit is raising up witnesses to the political ecology of God. An ecopolitical theology of this sort seeks the good of extractive Babylon's political ecology, and in so doing bears witness to the divine ecology, the becoming-habitat of God. Building on Augustine's eschatology, with Restoring Eden we can affirm that the earth is becoming the habitat of God, God's creaturely dwelling place. This is what the whole creation groans for, eagerly waiting for all creatures to be liberated from the futility of extraction for a new creation.

While I have pursued a mode of contrast between environmental action framed by climate change, on the one hand, and extractivism, on the other, it must be noted that my intent is not to inhibit climate action. My goal is to aid efforts at generating collective environmental action that are broad-based and driven not to sustain an unjust ecopolitical order but to change it. Insofar as the climate justice movement points in this direction, then there may yet be hope for

the kind of global framing climate change theory provides. However, if that change is going to bear witness to God's earthward action, then it will require personal conversion, as well. The idea of atmospheric change that menaces earth from above opens itself to creating idols and perpetuating an unjust ecopolitical order. A concrete focus on Christian witness in the multiplying, intensifying, and expanding sacrifice zones dotting the land (and seas and outer space) is a much more generative, pluralistic, and broad-based way to recognize that God calls all creatures to bear witness to their Creator. More specifically, I reconceptualize citizen science in an extractivist economy as a form of such witness that can provide powerful, empirically based visualizations in sacrifice zones, form citizens to participate in a neighborly political ecology, and join all of creation in bearing witness to the earthbound kingdom of God.

The agents of ecopolitical witness can trust that extractivist political ecologies can be converted into political ecologies that bear witness to God's garden-city—the Verdant Kingdom of God—through practices that orient science, society, and sacrifice toward the revealed truth that God loves creation by moving earthward and transforming it from its sacrifice zones out. Otherwise stated, whereas climate change asks us to look at the holes in the sky and the future, and leaves the fundamental structure of things intact, an ecopolitical witness against extractivism asks us to look first at the holes in the ground, in our societies, and ultimately in our hearts so that they might be converted.

As Restoring Eden did, so might we. They integrated faith, science, and environmental action through weaving together creation, sacrifice, truth-telling, and witness: They responded to the false sacrifices of human and otherkind creatures with contextual forms of priestly witness aimed at transforming sacrifice zones into sacred zones. Their production of environmental knowledge was an example of the kind of priestly witness we need during this time when

sacrifice zones threaten to become a mass condition: We need to tell the truth about creatures' true membership in the divine ecology, for it is the true community of life.

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Biography

Before pursuing doctoral studies in the Graduate Program in Religion at Duke University, Ryan Juskus completed degrees in political science and theology. He received a B.A. in International Relations and a Certificate in Human Needs and Global Resources from Wheaton College in 2005; his thesis was titled "The Search for Truth and Reconciliation in Peru." Ryan received an M.A. in General Theological Studies from Wheaton Graduate School in 2013; his master's thesis was titled "The Land is Mine: A Theological Approach to Property Rights and Development." He received fellowships from the Duke Graduate School, the Kenan Institute for Ethics, the John Hope Franklin Humanities Institute, and CrossCurrents/Auburn Seminary. Ryan's publications have appeared in *Ecclesial Practices*, *Studies in Christian Ethics*, *Journal of the Society of Christian Ethics*, *Theology*, the edited volume *Rooted and Grounded*, and the Social Science Research Council's website *The Immanent Frame*.

In addition to his formal studies, Ryan learned with activists and practitioners responding to human suffering, working with the human rights organization La Asociación Paz y Esperanza in Moyobamba, Peru; Manna, Inc., a nonprofit affordable homeownership developer in Washington, D.C.; and the Human Needs and Global Resources Program at Wheaton College.

Ryan is currently a member of the American Academy of Religion, where he presented papers in 2017, 2018, 2019, and 2020, and the Society of Christian Ethics, where he presented papers in 2018 and 2020 and served as a board member and student caucus convener. Ryan also serves as the vice chair of the board of directors of Peace and Hope International.

Ryan lives with Kendra and their sons, Langdon and Elias, in Durham, N.C.