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Said the River: The Confluence of Ecotheology and Water

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This dissertation has been duly read, reviewed, and critiqued by the Committee listed below, which hereby approves the manuscript of Margaret Harrington Ferris as fulfilling the scope and quality requirements for meriting the degree of Doctor of Philosophy in Religion.

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Abstract

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Environmental water issues are increasingly in the consciousness of environmental advocates, as well as scientists and engineers. Water experts have approached water issues from a scientific and engineering framework, which has led them to preference material and technical solutions. Yet those solutions have been insufficient. The interdisciplinary field of water studies has been critical of the scientific-engineering approach. Several water scholars have posited that water issues are social-human problems first, and material-technical problems second. They call for alternative approaches that emphasize reconstructing water as a necessary precursor to formulating effective, enduring solutions to environmental water issues.

Likewise, ecotheological scholars and religious environmental movement organizations (REMOs) are developing responses to water issues but from a spiritual stance. A significant challenge for ecotheologians and REMOs is to instigate social change that may transform anti-ecological water practices. Water-focused ecotheologians and REMOs face particular problems because water is an unusually complex environmental entity, both categorically and physically.

This dissertation investigates water as an environmental issue from the perspective of ecotheology, and also develops alternative approaches to water-focused advocacy from an ecotheological stance. It examines two categories of environmental water problems that are

intertwined: shortages and water pollution. I identify, analyze, and evaluate discourses from three domains: the water sector, water studies, and ecotheology. From my research within the literature of the water sector and water studies, I conclude that the water sector has much to learn from water studies. I further concluded that water-focused REMOs not only have a distinctive contribution to make to both the water sector and to water studies, but that they may even be a "hydraulic force" for water conservation, protection, and restoration. As a result, to be effective instigators of change, they first need to recognize and challenge their incognizant social constructions of water. My research shows that several water-focused ecotheologians and REMOs have made modest gains in bringing attention to water issues and contributing insights based on their ecotheological doctrine and praxis. However, few of them demonstrated an awareness of water studies or of the significance of the social construction of water. For this reason, they are limited in their ability to instigate transformation of water practices. Nevertheless, while ecotheologians and REMOs may be hampered, they still have distinctive contributions to offer the larger discourses on water protection, conservation, and restoration.

In this dissertation, I use the methods of constructive theology and ecological theology. Ecotheology offers an ecological critique of religious doctrine and a religious critique of cultural practices. In addition, I use two theoretical systems familiar to water studies and ecotheology. The first is social constructionism, which posits that knowledge of reality is organized, interpreted, and represented through human language and cognition. In turn, social constructs both enable and limit everyday practices. Second, as ecotheology aims to instigate transformation of ecologically harmful practices, I challenge conventional models of social change that have been assumed by the water sector and ecotheology. I contend that newer

theories of social change better account for how culture is transformed and are therefore more useful models for water-focused advocacy.

My central argument is that an ecotheological response to environmental water problems demands a more comprehensive and integrated approach to water. This approach would include: an understanding of how water is socially constructed; an ability to distinguish between water knowledge, water, and water-human relations; and knowledge of how circumscribed water constructs both enable and limit water practices. I further argue that before ecotheological doctrines of water can be reconstructed, water must be understood as material and non-material, as relational and transmutable, and that water and culture are mutually constitutive of one another. I integrate these insights with those of water-focused ecotheology and REMOs, which have both been critical of traditional constructions of humanity as separate from, superior to, and proper master of nature.

In the second half of the dissertation, I explore social constructions of nature and human nature in Euro-western culture. As constructs of water are grounded in those of nature and human nature, identifying and reconstructing the dominant constructs of each is a necessary precursor to reconstructing water. First, I discuss how nature and human nature have been constructed and the consequences of such constructions. Second, I examine reconstructions of each by ecotheologians. Third, I offer my own reconstructions. I contend that nature is a unified whole that exists for its own sake and it is where all abiotic and biotic entities dwell. Further, God dwells in nature, participates with it, and makes it holy. In addition, human nature is neither ontologically distinct nor superior to other living beings in the world. Humans are embedded within nature, existing interdependently and interrelationally with other entitles. Additionally, while human beings are not ontologically distinct, by virtue of our ability to act collaboratively

and to self-limit, humanity has a particular commission, given by God, to care and keep nature. Thus, I reconstruct the nature-human relationship as interdependent, and as entailing a moral obligation. In my last chapter, I conclude by offering three counternarratives of water, which I develop using my model of reimaging water through water awareness, literacy, and reconstruction as well as insights from water studies. I reconstruct water as a nexus, unfinishable, and part of holiness. It is in first understanding that water is relational, fluid, and in process that we may transform water-human engagements from being profligate and utilitarian to being sustainable and just.

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Writing a dissertation is a largely solitary act but it is never accomplished without support, compassion, faith, and love. I owe much thanks to many.

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for early conversations about REMOs. Profound thanks goes to Alison May, who was able to see my path to the finish line when I could not.

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to face uncertainty and wrestle with complexity. However, being your mother has been the real making of me. Most of all, thank you to my husband, John Murphy. There are no words to say how much your love, faith, and support has meant to me on this long, hard road. I hope that I have made you all proud.

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Introduction

I don't know who God is exactly.
But I'll tell you this.
I was sitting in the river named Clarion, on a water splashed stone
and all afternoon I listened to the voices of the river talking.
Whenever the water struck a stone it had something to say,
and the water itself, and even the mosses trailing under the water.
And slowly, very slowly, it became clear to me what they were saying.
Said the river I am part of holiness.
And I too, said the stone. And I too, whispered the moss beneath the water.

Mary Oliver, "At the River Clarion"[1]

I began to think critically about water by reading Marc Reisner's *Cadillac Desert*, which is a history of large-scale, highly engineered water infrastructure systems in the American West. Reisner explains that the consequences of this history is the absolute dependence on built water systems and the inevitability of persistent water shortages and crises. Dr. Dan Rhodes, then a professor of Christian Ethics at Claremont School of Theology, brought to my attention that, like water pollution, water use and consumption are environmental issues. He also helped me to understand the necessity of examining water issues from the perspective of justice, poverty, and race as the distribution and use of water is inherently political. By looking at water issues from such a viewpoint, I realized that water crises were an important field of study for ecotheology. One of the primary tasks of ecotheology is to give attention to the intersection of religious doctrine, interpretation, and praxis with new circumstances of everyday life, such as the eco-crisis. I also began to wonder if a theological perspective would contribute to the larger discourses and activism directed towards ecological conservation, protection, and restoration, as

[1] Mary Oliver, "At the River Clarion," *Devotions: The Selected Poems of Mary Oliver* (New York: Penguin Press, 2017), 86, lines 1–9.

ecotheology is both an ecological critique of religious doctrine and praxis as well as a theological critique of contemporary culture.

The overall purpose of this project is to investigate environmental water issues from an ecotheological perspective and contribute alternative approaches. My research examines two categories of ecological water problems that are intertwined: water shortages and water pollution. In addition, as ecotheology should and does speak to contemporary problems, this project seeks to developed alternative, distinctively theological approaches to water-focused advocacy. To that end, I have two major lines of inquiry. The first is, what are the causes of environmental water problems, and the second is, what responses are most appropriate for water-focused ecotheological scholars and religious environmental movement organizations?

To understand why crises occur, I read widely on the nature of water-human relationships. Water is essential to all domains of human culture, from farming to energy production. Yet contemporary Euro-western culture's water practices do not reflect that essential nature and even suggest that water is of little cultural or moral value. In examining the relationship between water and humanity, I concluded that I must delve more deeply by examining what water is and why Euro-western culture undervalues water despite its absolute necessity to economic, political, cultural, and religious domains. Consequently, I began to explore the transdisciplinary literature of water scholarship.

At first, I postulated that the most effective response to water crises in the West would be through retrieving values, such as love of nature, or through appeals to ends, such as ecojustice. I further postulated that retrieval of values or appeal towards ends could be initiated and sustained through consciousness raising and education programs. I had thought the cause of over-consumption rested on of a lack of awareness of water, water systems and how *sine qua non*

water is. However, I came to understand that water shortages were not simply a problem of fixed quantities of freshwater or uneven distribution. These are proximate causes. Shortages are caused by how much and at what rate water is either used/consumed. What determines usage? I turned to the water literature to further investigate.

Fortuitously, I reread a passage from the novel *Watership Down* by Richard Adams, which asserts that humanity takes water for granted yet not waterfalls. Adams writes:

> We are not conscious of daylight as that which displaces darkness. Daylight, even when the sun is clear of clouds, seems to us simply the natural condition of the earth and air. When we think of the downs, we think of the downs in daylight, as with think of a rabbit with its fur on. Stubbs may have envisaged the skeleton inside the horse, but most of us do not: and we do not usually envisage the downs without daylight, even though the light is not a part of the down itself as the hide is part of the horse itself. We take daylight for granted. But moonlight is another matter. It is inconstant. The full moon wanes and returns again. Clouds may obscure it to an extent to which they cannot obscure daylight. Water is necessary to us, but a waterfall is not. Where it is to be found it is something extra, a beautiful ornament. We need daylight and to that extent it us utilitarian, but moonlight we do not need. When it comes, it serves no necessity. … And its low intensity—so much lower than that of daylight—makes us conscious that it is something added to the down, to give it, for only a little time, a singular and marvelous quality that we should admire while we can, for soon it will be gone again.

At first I thought that Adams, an amateur naturalist, was corroborating my hypothesis that human beings take water for granted because we value what is able to catch and keep our attention, and overlook what is *sine qua non* because it is reliable or mundane. I had theorized that if the cause of water over-consumption was due to lack of awareness or understanding, then the appropriate response should be consciousness raising and reconnection with cultural and moral values. However, there was something else in the passage that I kept drawing me back. Adams stated that we take for granted sunlight and water because we think of them as "part of the natural condition" of a place. Hence, we take for granted abundant freshwater because we have constructed plentiful, reliable water as the natural condition of modern life. Reading Adams's

words opened up what I had previously read by William Cronin, Kate Soper, Celia Deane Drummond, and Anna Peterson on the social construction of nature, and what Jamie Linton and Veronica Strang have written on the social construction of water. Thus, I realized that while water use and consumption depend on factors such as availability, habit, and price, those very factors are the result of what the larger culture has structured itself to value, provide, and manage. I had come to see that the availability of plentiful, reliable water is not contingent on merely the material availability of water but also the social constructions that tell us we must have it. In addition, how we use water is also determined by what we think water is. Therefore, the fundamental causes of water shortages are not material alone but also are contingent on what we believe to be the proper relationship between water and culture, and indeed what we think water is.

Having comprehended that water practices are shaped and limited by the social constructions of water, I investigated what the most dominant social constructions are and how they are shaped by and in turn shape the social constructions of nature and human nature. In the West, water has been narrowly constructed as a homogeneous material object, which gives sanction to a utilitarian and profligate relation to water. I conclude, along with water scholars, that water must be reconstructed as more than a material and utilitarian substance, which necessitates examining the social construction of water-human relations, nature, and human nature.

As I worked with the literature of ecotheology and water studies, I saw that a key part of responding to water crises was to investigate social change theory, which became my second line of inquiry. This is a significant question for ecotheology for two reasons. First, theology should and does speak to contemporary problems, and ecotheology's primary task should be to develop

concrete responses to eco-crisis. Second, the models of social change most assumed within the field have gone unchallenged. Only a small number of ecotheologians have recognized that the dominant models within the field are based on the Weberian model that cultural ideals are the drivers of social change. Thus, in this project, I explore two alternative theories of social change.

How is social constructionism related to the methodological tradition of ecotheology, and how is it relevant to developing distinctively theological responses to eco-crisis? Since its earliest days, ecotheology has investigated how the social construction of nature and humanity are bound together, and how those constructions shape our everyday environmental practices. Ecotheologians have also investigated the origins of those constructions, and have established that they are rooted in Christian doctrine as well as in ancient thought and the intellectual reformulations of the Enlightenment. Therefore, while not singularly responsible for the eco-crisis, Christians are responsible to confront both the religious and the cultural constructions that contributed to the crisis, and to respond through theological analysis, critique, and reconstruction of nature and humanity. Yet, it can be difficult to make the connection between academic reconstructions and the social change that is needed to transform everyday environmental practices in a largely secular society. Indeed, I found it difficult to picture such change myself. I found an answer in a place I did not expect—in the words of Walter Brueggemann speaking on sabbath as resistance.[2] Brueggemann spoke of the tradition of the prophets in the Hebrew Bible and the role that prophets such as Moses, Elijah, and, Jeremiah played in social transformation. Brueggemann further explained that the prophets challenged conventional explanatory schemes

[2] Walter Brueggemann, "Sabbath Justice: Beyond Pharaoh," (lecture, Queen Anne United Methodist Church, Seattle, Washington. March 13, 2015). The major themes and arguments of the lecture are more elaborately presented in *Sabbath as Resistance: Saying No to the Culture of Now*, 1st ed. (Louisville, KY: Westminster John Knox Press, 2014).

of reality through their public lament and judgment of idolatry and injustice. Still, as important as their lament and judgment were, and continue to be to theists, an essential complement to them is what Brueggemann calls energizing hope. For the prophets, hope is not a wish but is waiting in openness to an alternate future because prophetic hope is not based on circumstances but is rounded in a loving and steadfast God. Brueggemann writes that it is through the use of the poetic language of lament and judgment that prophets are able to disrupt the social order. What is more, Brueggemann stated, is that through hope the prophets speak into being alternative conceptual schemes. After attending Brueggemann's lecture, I read Jamie Linton's *What is Water*? and recognized that Linton was arguing that discourses on water shortage crises depend on the construct of scarcity that is pervasive in the West, and is itself part of a larger conceptual scheme. Moreover, Linton argued that the full reality of water is not contained in our modern and post-modern social constructions of water. I revisited Brueggemann's work on prophetic imagination and realized that not only was it descriptive of the reconstruction that water scholars called for, but that Brueggemann was also describing the larger project of ecotheology.[3] Brueggemann explained that it was the task of the prophet to protest idolatry, inequity, and moral failing, and to adjudicate transgression and abuse of power. Ecotheology does this also. It laments the injustice and harm of unsustainable and toxic environmental practices and calls to account both religious tradition and cultural habits that accept and perpetuate environmental wrongdoing. In addition, ecotheology retrieves, reconfigures, and reconstructs the explanatory schemes that are unseen and uncontested by Euro-western culture, and in doing so ecotheology speaks into being an alternative future that is more just and sustainable.

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[3] Walter Brueggemann, *The Prophetic Imagination*, 2nd edition (Minneapolis: Fortress Press, 2001) and *The Practice of Prophetic Imagination: Preaching an Emancipating Word* (Minneapolis: Fortress Press, 2012).

As I worked to re-imagine water and how contemporary, Euro-western culture might more justly and sustainable relate to water, I found another unexpected insight in the lines of a poem called "At the River Clarion" by Mary Oliver, with which I opened this chapter. To me, the poem describes an altogether different way of relating to water than how Euro-western culture currently does. In the West, we think of water as a "natural substance" that is external to human culture or, when it is a useful, a "natural resource," which we reclaim, abstract, and apportion rights to. We do this because water has been socially constructed as a material substance. With such a construction, to think of water as more than instrumentally valuable or as having dignity seems nonsensical and even sentimental. In Oliver's poem, when the narrator patiently listens, the river speaks of a different way of knowing water, and therefore a different relationship between humanity and numerous bodies and flows of water that we live amidst. Instead of a relationship based in utility, the relation between the narrator and the River Clarion is one of mutuality and respect. Moreover, Oliver has reimagined water as having agency, and voice, as do the stones and mosses that the waters of the river flow past. As I will discuss later in chapters one and seven, water is understood in Euro-western culture as a material substance that sustains life but is not alive, and therefore is not afforded its own dignity. Thus, to reimagine water as more than just existing but having agency and voice is unconventional, perhaps even disruptive. Further, to attribute to the river, to the stone, and to the moss, a participatory relationship with holiness re-imagines not only water but water-human and nature-human relations. For if, like humanity, the many non-human entities that abound in the world participate in holiness, how might this reconfigure humanity's everyday engagements with them?

In this dissertation, I contend that the postmodern way we think of water is harmful, and for theists it is an idolatry. The *water that we think with* puts the needs of humanity and a

particular class of humanity—those who are engaged in the industrial and post-industrial marketplaces—above a relation with other humans and nonhumans downstream, and above the needs of the whole of the ecosphere.[4] How we think of water ignores the fact that nature is a unified whole that exists for its own sake, and humans are embedded within nature and exist interdependently and inter-relationally with other entities in the world. Further, it ignores that the whole of nature (inclusive of humanity) engages in covenant relationship with God, and is made holy by God. Similarly embedded within nature, water bodies and flows are a fundamental part of God's creative activity, and God makes water holy. Thus, it is acceptable, in fact, it is necessary, to rethink water as an entity rather than a substance, as intertwined with human culture, and as in relation with the Divine. For me, Oliver's poem is a fitting framework for an investigation of environmental water crises, water use, and water itself from the perspective of ecotheology.

In this dissertation, I follow two main lines of inquiry: what are the causes of environmental water problems and what responses are most appropriate for water-focused ecotheological scholars and communities? In the first half, in chapters one to four, I investigate the first question by examining the social construction of scarcity, water, and water-human relations, and the historic processes that led to their current forms. I also discuss how water has been theorized by water studies and how this contributes to a better understanding of environmental water advocacy. Further, I offer a model of reimaging water. In addition, I examine social change theory and the religious environmental movement. In the second half of the dissertation, as a precursor to reconstructing water and water-human relations, I analyze,

[4] This phrase, which I explain more fully in chapter one, is meant to indicate the cultural assumptions about water that are so deeply embedded and automatic that they are taken as common knowledge, such as water being equated with H_2O. They are so unconscious that we think *with* them rather than about them.

critique, and reconstruct the dominant constructions of nature and human nature that underlie the dominant constructs of water. In chapters five and six, I reconstruct nature as a unified whole, where God dwells and is in relationship with the whole of biotic and abiotic entities, and not, as has been assumed in the Modern period, merely humanity. I reconstruct human nature as having the same ontological being as nonhuman animals, and as having particular abilities to work collaboratively and to self-limit. In addition, I reconstruct the relationship between nature and humanity as that of neighbors, and that humanity has a commission to care for nature as its neighbor. In chapter seven, I reimagine water as a nexus that is not fully knowable, and one that is "part of holiness." My reconstructions of nature, human nature, water-nature-human relations, and water offer a distinctly ecotheological approach to environmental water crises, and one that points to alternative water-human relationships and water practices that are sustainable and just.

Chapter One: When We See Water

Conservation is getting nowhere because it is incompatible with our Abrahamic concept of land. We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.

—Aldo Leopold, *Sand County Almanac*[1]

In the East, to waste water is to consume it needlessly or excessively. In the West, to waste water is not to consume it—to let it flow unimpeded and undiverted down rivers. Use of water is, by 'definition' use…even if it is to be sold, at vastly subsidized rates, to farmers irrigating crops in the desert which their counterparts in Mississippi or Arkansas are, at the very moment, being paid not to grow. To easterners, 'conservation' of water usually means protecting rivers from development; in the West, it means building dams.

—Marc Reisner, *Cadillac Desert* [2]

Introduction

The postmodern globalized world is a thirsty one. To start, population rise and the growing prosperity of many nations in the twentieth and twenty-first centuries have exponentially increased the per capita demand for freshwater.[3] In fact, the trend of urbanization, which began in the nineteenth century and has increased ever since, has decreased natural recharging of surface and groundwater systems, and has increased pollution of freshwater, both of which, in turn, reduce available potable water supplies. In addition, in the twentieth century, while the global population experienced a three-fold increase, our aggregate water use experienced a six-fold increase.[4] Further, many newer industries, such as the electronics industry and transnational

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[1] Aldo Leopold, *Sand County Almanac: With Essays on Conservation from Round River* (New York: Ballantine Books, 1986), viii.
[2] Marc Reisner, *Cadillac Desert: The American West and its Disappearing Water,* rev. ed. (New York: Penguin Press, 1993), 12.
[3] Brian D. Richter et al., "Tapped Out: How Can Cities Secure Their Water Future?" *Water Policy* 15, no. 3 (June 2013): 335–363, 353–358. doi.org/10.2166/wp.2013.105.
[4] Peter Rogers and Susan Leal, *Running Out of Water: The Looming Crisis and Solutions to Conserve Our Most Precious Resource* (London: St. Martin's Press, 2010), 2.

clothing manufacturing, are highly intensive water consumers.[5] Likewise, modern farming practices demand great volumes of water and also can be considerable polluters of groundwater, rivers, and oceans. The modern, highly-industrialized regions of the world depends on vast quantities of freshwater, and consumes a large portion of those quantities.[6] As Lena Partzsch, a scholar of human geography and water governance, observes, "The shortage of water is increasing mainly because of an intensified demand resulting from population growth, persistent urbanization and economic development, together with new patterns of consumption (e.g., more meat consumption)."[7]

In the past decade, a great deal has been written in many disciplines about a variety of water concerns with the intention of raising consciousness and spurring social action. For example, water policy professionals and academics have written on concerns for economic access (privatization), water pollution, economic and military security, and public health. This growing, multi-disciplinary body of literature, has increased the consciousness in the water-rich, post-modern West for many chronic and endemic water problems around the globe. As water problems are grave, complex and impact many stake-holders, the attention has been valuable. However, when examined across disciplines, or across the multitude of concerns, the literature

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[5] Water consumption—The UN, 2006 statistic is that the industry sector accounts for 22 percent of the total use globally. However, according to climate Policy Watcher, industries in the Global South use as little as 8 percent whereas the Global North's industries use as much as 59 percent of the available water in their country's economies. Also, our patterns of everyday water use/consumption are unsustainable. And it is not in the shower or watering the lawn where we must first direct our attention. According to WWF: "wasteful irrigation systems on farms consume about 70 percent of the world's freshwater, over double that of any other industry. By contrast, municipal water represents a mere 8 percent of global use."

[6] Amy Vickers defines water consumption as "water use the permanently withdraws water from its source; water that is no longer available because it has evaporated, been transpired by plants, incorporated into products or crops, consumed by people or livestock, or otherwise removed from the immediate water environment." Amy Vickers, *Handbook of Water Use and Conservation: Homes, Landscapes, Industries, Businesses, Farms* (Amherst, MA: WaterPlow Press, 2012), 425.

[7] Lena Partzsch, "Water in Danger," in *Water Marks Our Life*, eds. Solange Lefebvre and Marie-Theres Wacker (London: SCM Press, 2012), 14.

frequently represents water problems as one-dimensional. Water problems such as deteriorating urban infrastructure in major industrial cities are aggregated with the issue of clean water and public health all being described as "the global water crisis."[8] In reality, the water problems around the globe vary from region to region, often have manifold causes, and are better described as "water crises." In addition, a subset of the literature on water crises reduces shortages in water-rich and water-poor regions alike as caused by a volumetric deficit in the supply whether the shortfall is due to demand-side factors. For example, there is little evaluation of whether demands from a region's domestic, agricultural, and industrial sectors are realistic for native water. In the language of the water sector, and cognate fields engaged in water research, the shortfalls of supply are deemed as either "water scarcity" or, in some of the older literature, "water stress."[9] In the past decade, a number of scholars in the fields of political ecology, geography, and anthropology are calling into question the construal of "scarcity."[10] In his well-researched survey of the history of water use and human water infrastructure, journalist Steven Solomon makes this point succinctly: "It wasn't that the [United States] didn't have enough *total* water to meet its needs. Rather it was that its profligate use was finally exhausting the productive

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[8] Typically when discussing the problems of water and public health, the acronym WaSH is used which stands for water, sanitation and hygiene.

[9] Liz Roberts and Katherine Phillips, introduction to *Water, Creativity and Meaning*, eds. Roberts and Phillips (London: Routledge, 2018), 4. *Water scarcity* is commonly defined as the inability of a region's total volumetric water (inclusive of surface water, groundwater, and imported non-native water) to meet the demands of human water usage within a region. *Water stress*, a broader term, commonly indicates that a region or nation has limited ability to meet reliably meet human and ecological water needs (ones which are established as reasonable for that region or nation). Also a technical term, *water scarcity* is a more quantitative term that refers to "volumetric abundance, or lack thereof, of water supply" for a given region or nation, and takes into account several factors such as how accessible water supply is to the region's population. See Peter Schulte, "Defining Water Scarcity, Water Stress, and Water Risk: It's Not Just Semantics," *Pacific Institute Insights* (blog of Pacific Institute), February 4, 2014, http://pacinst.org/water-definitions/.

[10] Jessica Budds, "Whose Scarcity? The Hydrosocial Cycle and the Changing Waterscape of La Ligua River Basin, Chile," in *Contentious Geographies: Environmental Knowledge, Meaning, Scale,* eds. Michael K. Goodman, Maxwell T. Boykoff and Kyle T. Evered (London: Routledge, 2008); Jamie Linton, *What is Water?: The History of a Modern Abstraction* (Vancouver: UBC Press, 2010); and Maria de Lourdes Zurita, et al., "Reframing Water: Contesting H_2O within the European Union," *Geoforum* 65 (October 2015): 170–178.

limits created by the innovative successes of its age of giant dams. The era of cheap, plentiful water was closing."[11] It is striking that literature from both the policy and water industry sectors use the term *scarcity* uncritically, and therefore never questions whether volumetric deficits of water supply are due to fixed factors such as geography or whether they are a consequence of the lifestyle expectations of a region. On closer examination, it is evident that discourses on water crises, particularly those that characterize water crises as one undifferentiated crisis, would be more useful if the literature distinguished between problems of infrastructure, problems of service, problems of pollution, or problems of consumption.[12] In this dissertation, I will not focus on the water crises of regions that lack infrastructure, have truly arid climates, or lack governmental or economic capacity to provide water services.

An additional consideration is what focus is most needed within particular regions. Two factors are critical to providing reliable, safe freshwater at levels experienced in the post-industrial West: adequate year-round volume and access to consistent services via infrastructure systems. Many regions suffer from high seasonality of rainfall ("interannual fluctuations") and therefore need infrastructure systems that can safely store great volumes of water. Other regions have never had the capital or the stable governments to build reliable water infrastructure systems. Other regions may have adequate infrastructure, but pervasive corruption erodes the safety, accessibility, and quantity available to the population. In the post-industrial West, many regions are water-rich and have robust water services. Other regions, such as the Great Plains of the United States, lack enough rainfall to sustain large, urban populations or provide adequate

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[11] Steven Solomon, *Water: The Epic Struggle for Wealth, Power, and Civilization* (New York: HarperPerennial, 2011), 349.
[12] Veena Srinivasan, et al., "The Nature and Causes of the Global Water Crisis: Syndromes from a Meta-analysis of Coupled Human-water Studies," *Water Resources Research*, 48, no. 10 (October 2012), 10516–, doi:10.1029/2011WR011087.

water for irrigation farming. However, despite being water-poor, these regions have the capital wealth and stable government systems that they have been able to build comprehensive water infrastructure systems, which are then able to import vast quantities of water from distant water catchments to the thirsty urban or agricultural districts. Hence, in the post-industrial West, shortfalls of freshwater are fundamentally not due to a lack of water or infrastructure. Rather, the central questions for the water sector—experts and advocates alike—are what volumes of water are presupposed; who uses water for what purposes; and whether current water-use practices are sustainable and equitable. As anthropologist and water scholar Veronica Strang writes, "Though generally regarded as an ecological or technical problem, the overuse of water is, above all, a social and political issue. An understanding and appreciation of people's diverse relationships with water... is vital for the resolution of conflict and for the development of more ecological and socially sustainable forms of water use."[13]

It is very important to the effectiveness of discourses about water shortages in the West to make this distinction between truly scant freshwater supplies or lack of infrastructure as opposed to shortages of freshwater that are due to over-consumption and or water demands that are inappropriate for a water-poor region. In the post-industrial West, discourses on water rarely question the appropriateness of particular practices, such as growing water-intensive crops such as cotton in California's arid Imperial Valley. Hence, merely increasing supply or reducing demand do not get at the root problem of why water is chronically in short supply in the West, nor how to reduce or even reverse water pollution. Water shortage problems are due to how we use water not to a problem inherent to water itself. The problem of water pollution is intertwined

[13] Veronica Strang, *Gardening the World: Agency, Identity and the Ownership of Water* (Oxford: Berghahn Books, 2009), 5.

with over-consumption in part due to pollution further depleting available water but also because many water uses both pollute and deplete water systems, and also the water sector has conflated conservation with demand-reduction interventions. Thus, the conventional focus on total water volume or on water demand are the wrong starting points for water advocates and the water sector. I contend that our water use practices depend on how we think of water, how we see it—or fail to see it—and how we read it. Therefore, transforming water practices hinges on reimagining water. In addition, the discourses on water shortages have been highly anthropocentric, yet when water is oversubscribed and over-consumed in a region, the consequences are felt widely throughout its watersheds. The public, industry, and academic discourses on water shortages point to the limitations and suffering of human populations that will result from non-intervention but rarely address the larger ecosystems within which human communities are situated. Non-human animals and plants suffer as they compete for freshwater supplies. Additionally, built water systems produce surface and ground water pollution, as do the impermeable surfaces that human cultures build. Indeed, a great deal of unintended damage to waterscapes has been caused by flood protection infrastructure as well as draining of wetlands to improve health outcomes for human populations and provide for land development. What I am suggesting is that shortages are as much environmental issues as they are economic, equality, political, and humanitarian ones. Hence, my starting point in this project is to address water issues not as one, global crisis but as complex and sometimes compound regional crises. I will address the compound crises in the post-industrial West as an ecological crisis, and the fact that they have complex causation. I will address three categories of causes: oversubscription of supply; water pollution; and energy production.

As I have indicated above, it is important to shift away from a focus on *scarcity* to one that understands post-industrial and urban *thirst,* which is caused by supply- and demand-side factors. Even more important will be to shift from a focus on water supplies and shortages to understanding water-human relations. This chapter focuses on how the modern discourses about water crises from the water sector, analysis and criticism by scholars, and my own criticism and analysis. A key point that I will make below is that water has been socially constructed as an abiotic, quantifiable material object, which is dualistic and reductive, and I contend that such a social construction leads to instrumental or functional water-human relations and creates and reinforces a utilitarian ethic that undergirds a considerable amount of the discourses on water shortages and pollution. Further, my central thesis is that ecological activism on water issues in the post-industrial West will need to grapple with how water has been socially constructed as a primary step to transforming water practices. Below, I will examine how water crises have been constructed, then I will review the contribution of scholars in the social sciences and humanities to discourses on water, and I will offer my own contribution. The purpose of this chapter is to bring to the fore the problem of how thinking about water shapes and limits how we engage with bodies and flows of water both within and away from human settlements, and our proper relations with them. Hence, this chapter is about understanding that we have a broken way of thinking about water.

My larger point in this chapter is that it is too often assumed that water crises are caused by material or environmental factors, and may be resolved through scientific, technical, economic approaches (external application to the process), such thinking is positivistic and circumscribed. It is only through challenging what *global water crisis* means, by examining assumptions present in how the idea of global crisis is constructed as well as how water is

constructed in Euro-western cultures that more thoroughgoing responses can be brought to light. Likewise, we must challenge the social constructions of water, nature, and human to discover the meanings that constrain and enable human engagements with waterscapes, and thus be able to reconstruct water, nature, and human so that future engagements may be sustainable and just.

This chapter explores the water that we think with, and how environmental discourses, both secular and religious, are hampered by misunderstanding water as a homogenous, material object. It has five sections. I begin with a general introduction, then in section two, I move on to an outline of my methodology and establishing important terms. In the third section, I discuss several conventional approaches to water shortfalls. In section four, I discuss criticism and alternative approaches found in the literature of water studies. In section five, I give an analysis from the perspective of ecotheology and offer a grammar for making water seen and legible and suggest a model for how water may be reimagined.

Methodology

While interdisciplinary, this dissertation is first and foremost a work of constructive theology. As such, its principal task is to offer analysis, criticism, and reconstruction of how water has been understood and represented as a material, asocial substance. Additionally, it is an ecotheology, which means that it presents analysis, criticism, and reconstruction of nature and humanity from the perspective of an environmental lament.[14] Further, as my particular location epistemologically is that of being a protestant-educated westerner.[15] Within ecotheology, I presume that ecological

[14] Peter Manley Scott, "Which Nature? Whose Justice? Shifting Meanings of Nature in Recent Ecotheology," in *Studies in Church History* 46 (2010), 431, https://doi:10.1017/S0424208400000747; Heather Eaton, "Where Do We Go from Here? Methodology, Next Steps, Social Change," in *Christian Faith and the Earth: Current Paths and Emerging Horizons in Ecotheology,* eds. Ernst M. Conradie, Sigurd Bergmann, Celia Deane-Drummond, and Denis Edwards (London: Bloomsbury Publishing, 2015): 218.

[15] I locate myself within the liberal Protestant tradition. While I was raised in the Catholic tradition, my theological studies have been largely within the framework of Protestantism, with a great emphasis on ecumenicalism and religious pluralism.

problems do not occur by themselves but at the intersection of economic, gender, race, and class disparity. As ecotheology addresses the brokenness of creation as well as the relationship between humanity and nature, the task of ecotheology usually includes prescriptive reconstruction as well as analysis. I will use the work of Old Testament scholar and biblical theologian Walter Brueggemann on the prophetic imagination as a model for rethinking water. Brueggemann explains that the task of a prophet, by which he means a person engaged in the role of cultural critic and poet, is twofold.[16] The initial prophetic task is to make a public presentation of the grief, a lament, which gives name to the brokenness of a present moment. The lament is a protest and a judgment; it expresses the sorrow and anger at the injustice and/or destruction that has occurred, and names how the community has faltered or missed its mark. The second task, which is equally important, is the public presentation of hope. The prophetic task of hope calls into being a previously un-imagined future and point the way toward that future, what Brueggemann described as the expression of "new realities against the more visible ones of the old order."[17] Ecotheology likewise offers a lament and judgment, and an energizing reimagining of an alternate future to live into. In chapter three, I will put in context the wide variety of ecotheologies but here I will state that I am grounded in the EcoJustice branch of Christian ecotheology. My starting point for ecotheology is that ecological thinking belongs at the heart of Christian life, and churches can be a "hydraulic force" for change because of their distinctive attitudes and practices.[18] In addition, a central ecotheological premise of this dissertation is that as long as nature and culture are

[16] Walter Brueggemann, *The Prophetic Imagination*, 2nd edition (Minneapolis: Fortress Press, 2001).
[17] Brueggemann, *Prophetic Imagination*, 14.
[18] "Hydraulic force" is a metaphor used by theologian Walter Rauschenbusch to describe the power of religious belief to redirect cultural practices toward more pro-social ends. I discuss this idea more fully in chapter three.

conceptually divorced, Euro-western culture (see below) will continue to privilege culture over nature, and everyday practices will remain unsustainable and unjust.

In addition to the being grounded in ecotheology, I will also rely on two leading theoretical frameworks from the social sciences: social constructionism and social change theory. Social constructionism posits that knowledge of reality is organized, interpreted, and represented jointly by humanity. Such jointly constructed knowledge is shared primarily through language, but also by means of cultural conventions and practices. In turn these same constructions become conceptual frameworks, mediate our experience of reality, and become what Immanuel Kant termed "regulative ideas." Said another way, social constructions are "taken-for-granted-meanings" or established patterns of mutual meaning and expectation that have been internalized to the point that they are unquestioned, tacit knowledge. What is important to note about social constructions is that they are both "concepts of the mind" and, in many instances, signify something in the actual world. Thus, in this chapter and others, I presume a "soft" social constructionism, meaning that human beings do not construct material entities themselves but that social constructions do inescapably mediate our phenomenological and conceptual experiences of material entities. I will also use the concepts of dominant social construction, and dominant or hegemonic narrative. Additionally, as ecotheology is grounded in hope for an alternative future, I look critically at the standard models of social change.[19] I am skeptical of the behavioral or values-based theories assumed by environmental advocates and many scholars, such as rational choice theory and value-belief-norm theory, which have been advanced by the

[19] Heather Eaton, *Introducing Ecofeminist Theologies* (London: T&T Clark, 2005), 35–36. By social change, I mean transformation in the cultural, structural, or population characteristics of a social system. Social change may occur suddenly or gradually, may be sparked internally or externally, may be spontaneous or instigated, but it results in a decidedly new form rather than a return to prior forms.

fields of economics and psychology. My skepticism emerged as I began to recognize that the underlying assumptions of human nature that pervaded the literature from water policy professionals, and more generally environmental advocates, held that human beings are rational, self-seeking agents, and that social change was driven by ends. This contradicted my own view of human nature, which is grounded in the thought of Reinhold Niebuhr. Niebuhr emphasized the paradoxical nature of human beings, and also was careful to distinguish between individual and collective action. With this critical eye, I then recognized that the standard interventions of the water sector were held captive by their unchallenged acceptance of behavioral or values-based theories. In exploring the work of constructive ecotheologians, I was led to the work in sociology and anthropology on social transformation, which has proved fruitful. Therefore, in later chapters, I will present two theories of social change that are well established in sociology: toolkit theory and social practice theory. The toolkit theory is most associated with sociologists Ann Swidler and William Sewell. In examining what drives social change (large and small), Swidler and Sewell have established that the popular understanding of collective values and goals are not the primary drivers of social change. Instead, toolkit theory posits that what drives social change. Social practice theory has roots similar to toolkit theory, but it is more interested in social actions by groups rather than social structures or individual agents, and therefore examines dynamics of everyday social phenomenon. The most essential contribution of social change theory is its contention that everyday social practices, such water use, are not transformed through reconfiguring ends but in transforming the building blocks of the practices, which are the social constructions of water and water-human relations. Thus, I posit that it is in reimagining water that consumptive and non-stainable water practices will be transformed. Below, I will

propose a model for the process of reimagining water, which is based on Brueggemann's model of prophetic imagination.

This dissertation is an ecotheology of water. It is intended to address the question of how to reimagine water in the West, and fits into a larger ecological and ecojustice discourses on water crises. Throughout this chapter and those that follow, I will be looking at water crises from the perspective of Euro-western industrialized and post-industrialized cultures, in particular the United States. This is for three methodological reasons. First, as I stated above, I am situated here. Second, as water crises are always particular to the spatiotemporal location, responses to them must also be situated. In the West, discourses about water crises have not been situated enough, which has led to the mistaken view that water crises may be solved reductive solutions. I presume that water crises are inherently relational and communal, and therefore they will not be solved on the level of individual households. Instead, they must be tackled by communities at the municipal or regional level, and will be resolved only through extensive inquiry and reimagination. Third, as will be discussed in more depth in chapter two, the United States became a technological leader of large-scale, engineered water projects and later, due to the economic power and political hegemony of the United States in the second half of the twentieth century, the social construction of water and water management were exported around the globe.[20] Hence, as the United States has and continues to play such an authoritative role in promoting and funding large-scale, engineered water systems, it is all the more important to critically engaged social constructions of water and water infrastructure systems, as well as to

[20] Veronica Strang, "Re-Imagined Communities: The Transformational Potential of Interspecies Ethnography in Water Policy Development," in *The Oxford Handbook of Water Politics and Policy*, eds. Ken Conca and Erika Weinthal (Oxford: Oxford University Press, 2018), 149; Alberto Arce and Norman Long, *Anthropology, Development, and Modernities: Exploring Discourses, Counter-tendencies, and Violence* (London: New York, Routledge, 2000), 14–15.

deconstruct the idea that water crises are material and solved through technology or marketplace instruments.

To best examine the multiplicity of water problems, I will draw on a large body of scholarship that may be called water studies or water scholarship, which is largely situated in the sciences and the social sciences. Water studies is inherently transdisciplinary. Thus, the water literature encompasses many disciplinary objectives and its readership includes individuals working in government policy and the water sector as well as the academy. Its vocabulary is not entirely consistent, as I will note below, nor does it share priorities or methodologies. Much of the literature is located in the social sciences, which do have many shared methodologies. Many scholars working on water research are well versed in ecology and hydrology. Additionally, as the literature spans many disciplines, the aims of the research are wide-ranging, overlapping at times with those of ecotheology and the environmental movement. Hence, this survey of the literature is intended to illustrate the variety of scholars working on water, but it is not intended to represent them as having a unified aim in studying water nor a consensus in how water is theorized.

PRELIMINARY POINTS

There are two preliminary points that are useful for framing this discussion of what water is and what it means: the idea of a dominant social construction and how water has been constructed as an almost exclusively material, rather than hybrid substance. In this chapter and in those that follow, I use the term *social construction* to signify a mental representation that is 1) shared, 2) multi-layered, 3) often accepted unquestioningly, and 4) not the thing itself. Below, I refer to *dominant construction* of water, and in later chapters I will also refer to the dominant social constructions of nature and human nature, or dominant construction. I wish to acknowledge that dominant constructions are just that: meanings within shared cultural systems that have

dominated for extended periods of time. While a dominant construction is by no means the only way of thinking about an entity or substance, nor is it held universally, a dominant construction does marginalize other meanings and, in most instances, controls professional, scholarly, and public discourses. Constructions can be contested, such as the construction of gender, or be largely unexamined within a culture.[21] The most important characteristics of a dominant construction is that it is widely held by members within a given culture who hold power or status and that it is so normative as to be common sense, often the only way of conceiving of its subject. As theologian Richard Rice writes,"[t]he fundamental assumptions of any age or culture occupy a level of our cognitive architecture so deep that it seems unnatural to question them. They are so deeply woven into the fabric of our thinking that we typically think *with* them, not *about* them."[22] Rice's distinction, that a social construction is one that we think with, is very useful. Thus, a dominant constructions is best understood as knowledge or a meaning that has been internalized to the point that it seems natural, or as Bruno Latour wrote, so tacit that it has "…no mark of its having been produced by anyone."[23]

The second preliminary point is to note the dichotomy between the social constructions of nature and culture in the post-modern Euro-western worldview, and that this is replicated by how water has been constructed as belonging to nature and not culture. The way in which water came to be conceptualized in contemporary culture stems from the way nature was constructed in the Early Modern Period, which in turn is rooted in the mind/body dualism that originated in

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[21] Ann Swidler, "Culture in Action: Symbols and Strategies," *American Sociological Review* 51, no. 2 (1986): 273–86, 25.
[22] Richard Rice, "The Challenge of Spiritual Individualism (and How to Meet it)," *Andrews University Seminary Studies* 43, no. 1 (Spring 2005): 113–31, 115.
[23] Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Cambridge, Harvard University Press, 1987), 43.

classical Greek philosophy and reached its zenith in the work of René Descartes.[24] The concept of nature evolved from the older concept of *natura,* which was an adjective use to signify the essential character of a thing (*rerum natura)*.[25] In the fourteenth century, *natura* underwent a semantic drift as natural philosophers came to use *natura* to describe the intrinsic force that controls the world or humanity, or both. In the seventeenth century, *natura* shifted again from being used largely as an adjective to signify the quality or essence of a thing to being a singular absolute noun that signified the abstract idea of "the material world itself, taken as including or not including human beings."[26] Later, as empiricism became the dominant epistemological framework, nature and culture came to be conceived as ontologically separate realms. Hence, since the end of the nineteenth century, nature is largely understood and represented as that which exists in the material world exogenous of humanity, culture, or human artifacts.[27] As geographer Owain Jones writes: "Although there is but one world in common, somehow it has long been common to suppose that the world is in fact divided in two: into a world of nature and another, one of culture. For more than four centuries this nature/culture dualism has shaped knowledge, politics, and ethics in the West…"[28] However, such an idea of nature has been rejected in many fields, including ecotheology.

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[24] Terje Tvedt and Terje Oestigaard, "A History of the Ideas of Water: Deconstructing Nature and Constructing Society," in *A History of Water: Ideas of Water from Ancient Societies to the Modern World*, Series II, vol. I, eds. Terje Tvedt and Terje Oestigaard (London: IB Tauris, 2009), 18.
[25] Raymond Williams, "Nature," in *Keywords: A Vocabulary of Culture and Society*, rev. ed. (New York, Oxford University Press, 1983), 219–224.
[26] Williams, *Keywords*, 219.
[27] Raymond Williams wrote, "Nature has meant…the 'unspoiled places', plants and creatures other than man. The use is especially current in contrasts between town and country: nature is what man has not made, though if he made it long enough ago—a hedgerow or a desert—it will usually be included as natural." Williams, *Keywords*, 223.
[28] Owain Jones, "After Nature: Entangled Worlds" in *A Companion to Environmental Geography,* eds. Noel Castree, David Demeritt, Diana Liverman, and Bruce Rhoads (Oxford: Blackwell Publishing, 2009), 294.

I will tackle this problem in more depth in chapters six and seven, but it is worthwhile to introduce the nature/culture dichotomy here. Just as nature is socially constructed, so too is water, which has led to a correlated construction of water.[29] Water has largely been constructed as natural, and therefore abiotic, passive, and material. For example, when a space is located geographically near to culture, it is constructed as domesticated or urban whereas if it is far from culture, it is constructed as natural. Hence, water has been conceived of as ontologically different than culture based on the taken-for-granted dualism of nature/culture. Water is defined as abiotic, and if it is unmodified, it is constructed as natural.[30] The meanings of water that may be cultural or cultured are usually ignored or abandoned in favor of those based on its material properties and qualities.[31] Further, in the post-modern age, water is conceived of as an object rather than an agent, as non-relational, and as abiotic. More bluntly, in the modern and post-modern industrialized and urbanized West, water has been constructed as dead, dumb, and disenchanted.

As we shall see in later chapters, the divide between nature and culture has been rejected by many scholars, as has the divide between water and culture. Historian and geographer Terje Tvedt concludes: "Water is culture, but it is also nature. It is never either or, but always both."[32] Tvedt, Strang, and other scholars and water experts are initiating a compelling reconstruction of water by calling for alternative constructs that honor the multifarious forms and meanings of water, and coherently account for its material and cultural dimensions.[33] Geographer Matthew

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[29] See Linton, *What is Water?,* 109; Veronica Strang, *The Meaning of Water* (Oxford: Berg, 2006), 115. Strang notes that water as a material substance, the prevailing social construction of water, is encoded as natural but only if it is unadulterated and unmanipulated by human communities.
[30] Linton, *What is Water?*, 157, 187–189.
[31] An excellent example of this is William Lycan's article "The Meaning of 'Water': An Unsolved Problem," *Philosophical Issues* 16, no. 1 (2006): 184–199. Lyman works out several issues of meaning, yet he only examines material meanings of water.
[32] Tvedt and Oestigaard, "History of the Ideas of Water," 3.
[33] See, for example, Erik Swyngedouw, "Circulations and Metabolisms: (Hybrid) Natures and (Cyborg) Cities," *Science as Culture* 15, no. 2 (2006): 105–121.

Grandy describes this re-envisioning of water as a "dialectical rather than a functionalist" model and explains that "an emphasis on dynamic processes of social and political contestation takes precedence over teleological conceptions."[34]

IMPORTANT TERMS

Nature and *water* are each complex words in English. Each has a broad range of meanings that must be considered, and within environmental discourses, particular meanings need ongoing attention. Both are used as concrete nouns, signifying particular places and instances. However, they are also used as "singular absolutes," by which I mean a noun that is used in the absolute sense and morphologically is singular rather than plural. Natures has a different sense than nature, as waters has a different sense than water. Becoming mindful of when we use nature and water in the singular absolute sense it significant because abstractions quickly become reifications. In addition to the grammatical, *nature* and *water* each word signifies a great variety of actual and abstract things. The noun *nature* can indicate a wide array of particular spaces but can also refer to the collective ideal of all spaces that are not *built*.[35] In addition, the use of the adjective *natural* is equally problematic.

As Raymond Williams wrote in his seminal work *Keywords*, human language has the ability to be particular and abstract, and linguistic drift will inevitably shift meanings.[36] My initial instinct to the muddiness and complexity of the terms *nature* and *water* was to develop terms that specified exactly what I meant to signify. However, I realized that this perpetuated the problem of divorcing nature and culture rather than ameliorate it. Therefore, I will use *nature*,

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[34] Matthew Gandy, "Rethinking Urban Metabolism: Water, Space and the Modern City," *City* 8, no. 3 (December 2004): 364.
[35] Several disciplines use the term *built* to designate spaces that have been modified by human culture. Urban and suburban spaces are built whereas Antarctica or unpopulated, oceanic islands are not built spaces.
[36] Williams, *Keywords*, 219–224.

natural, and *water* unadorned, unless particular clarity is needed. I will use the term *nature* in this sense: nature is the unmediated material world, which human beings exists within. Hence, I allow for nature to be described as *more* wild/unmodified and spaces such as cities to be *less* wild/built. The term *nature* has an additional level of complexity in that it commonly connotes contradictory senses. In Euro-western culture, *nature* is simultaneous conceived as all of reality including humanity and all of reality excepting humanity. I will discuss this more fully in chapter five. However, it should be noted that in this chapter and those that follow I am using the term *nature* as meaning the whole ecosphere inclusive of humanity, unless otherwise specified.

The word *water* is especially tricky because water flows and circulates. In some instances, it is important to emphasis the circulation of waters through built and non-built spaces, and therefore I will employ the inclusive term *water system*. When it is important to indicate where flows are located, I will use the more specific terms *built water system*, which indicates the flows through water supply and waste infrastructure system such as reservoirs and water mains, and *natural water system*, for flows through rivers, aquifers, wetlands, and oceans. Hence, I will refrain from using the more common terms found in the academic water literature of *material water* and *modified water*. In differentiating between expanses and flows of water and conceptual waters, I will differentiate these as different aspects of water, rather than different dimensions, characters, natures, or ontologies of water.[37] Each term is problematic to a greater or lesser degree because, while scholars are seeking a more comprehensive and inclusive understanding of water, such classifications divide rather than merely distinguish. Additionally, I will use the terms *shortfall* and *shortages* rather than *scarcity*. While all three terms indicate

[37] Several authors have argued for understanding water as having a variety of ontologies, such as Joachim Blatter Helen Ingram, Julian Yates, Leila Harris, and Nicole Wilson. I will discuss this more in chapter two.

insufficiency, scarcity has the sense of water itself beings scarce, whereas shortfall and shortage have the sense of supplies being less than what is expected or demanded. As I indicated above, scarcity is a socially constructed narrative that is seemly neutral but in actuality is used to ascribe asocial and apolitical causality to shortfalls in available freshwater.

Equally intricate are the terms *culture* and *society*. Again, I depend on the excellent scholarship of Williams, who explained in several texts that *culture* has three main senses. They are (i) "the independent and abstract noun which describes a general process of intellectual, spiritual and aesthetic development;" (ii); "the independent noun, whether used generally or specifically, which indicates a particular way of life, whether of a people, a period, a group, or humanity in general;" and (iii) "the independent and abstract noun which describes the works and practices of intellectual and especially artistic activity."[38] Of Williams three meanings, the first two are germane to this dissertation, and I will use them as such: (i) an absolute sense of culture as the collectively produced and shared concepts, conventions, and commitments of a large human population, and (ii) a descriptive sense of culture as being particular forms that have occurred in particular places at particular times. I will use *culture* in the (i) absolute sense when I contrast *culture* to *nature*. However, I will use *culture* in the (ii) descriptive sense when I discuss the historical process that led to the current social construction of water as homogenous, material object. I will refrain from using the term *society*. Like *culture*, *society* has several senses, and is often used ambiguously or interchangeably with *culture*. Further, several fields use *society* rather than *culture* to connote the absolute sense of the processes by which a large human community advances and its forms. Likewise, there is no fixed used across fields to connote *society* in the

[38] Raymond Williams, "The Analysis of Culture," in *Cultural Theory and Popular Culture: A Reader*, ed. John Storey (Athens: University of Georgia Press, 2006) 48.

sense of a particular way of life of a particular human humanity that lives in a particular socio-temporal location. Across the water literature, there is a marked degree of inconsistency and scholars rarely make their meaning explicit or note alternative terms. For the sake of clarity, I have chosen to use *culture* and not to use *society*. However, in direct quotations I have kept the original. To help my readers, I make note at the beginning of relevant chapters, in the footnotes, where instances of this occur so that readers are not caught unaware.

I will not use the term *creation*, which is commonly found in the ecotheology literature, except in chapter six. *Creation* is a term used to connote what has been created by God. It is sometimes used inclusive of humanity but more often it is used as a reconstruction of *nature* in the sense of that which is not human and is beloved/valued by God. I have refrained from using *creation* instead of *nature* for two reasons. First, as this project is intended to be in conversation within the larger discourses on water outside of ecotheology, it is important to have consistency of terminology. Second, from my work within the ecotheology literature, the ecotheologians who have worked through the significance and consequences of the social construction of either nature or creation is limited. As I have said of *nature*, *human nature*, and *water*, I maintain with *creation*—an authentic reconstruction of *creation* is not possible without critical analysis.

In addition, I will use the term *Euro-western culture* to refer to the particular sense of the culture of western Europe. *Euro-western culture* came to be through norms, values, customs, political structures, economic systems, and educational practices inherited from western Europe. *Euro-western culture* is characterized by an emphasis on individualism and rationalism that emerged from the traditions of Hellenistic philosophy, Scholasticism, humanism, the Scientific Revolution, the Enlightenment, and the modern university system. Thus, *Euro-western culture* has concepts and constructs, philosophical and religious categories, and societal structures that

are particular rather than universal and are largely invisible to those within the culture. In addition, *Euro-western culture* is characterized economically by systems of industrialization and post-industrialization, capitalism, urbanization, globalism, and consumerism. Although many countries that may be described as Euro-western adhere to forms of socialist governance and social welfare structures, the economic policies and markets of these nations still conform to concepts and constructs, conventions, and commitments of the larger Euro-western culture. Likewise, there is variation among nations in political and legal systems, but they still conform to the concepts and constructs, conventions, and commitments of classical liberalism and democracy. I have chosen the term *Euro-western,* which I own to Heather Eaton, to signify a culture that is not particular to the geographic Western Hemisphere, and to acknowledge its origins in occidental Europe.[39] Geographically speaking, the term applies to regions that either lie in western Europe or have been strongly influenced by *Euro-western culture* by immigrant populations, such as Australia. In addition, in using the term *Euro-western culture*, I also wish to call out what has been taken in previous generations as the only way of understanding culture and how such constructions effectively "disappear" the people who do reflect nor fully participate in the dominant Euro-western culture. At any given time, there are a great number of people living in regions dominated by *Euro-western culture* who, due to their own religion, political, ethnic, or economic circumstances, are neither "of" *Euro-western culture* or reject it. My own understanding of culture is that it is not one unified or homogenous system but is a

[39] As many ecotheologians have noted, in Eastern Orthodox Christianity the conceptual dualism between humanity and nature is not as stark. Eastern Orthodox Christianity does not share an Augustinian understanding of original sin that predominated in western Christianity, nor did eastern Christianity separate natural and supernatural revelation to the degree that western Christianity did after Aquinas and the scholastics, which resulted in natural theology. Thus, when I indicate the theological origins of Euro-western culture and how it shaped the culture for two millennia, I am not referring to the traditions or influence of Eastern Orthodox Christianity.

multitude of norms, values, mores, beliefs, and epistemologies that have particularly but also overlap and interact. In addition, the concepts, constructs, conventions, and commitments within this multitude are sometimes in harmony and sometimes at odds, and thus are continually in process. Yet, while it is important to acknowledge the plurality of culture, it is also important to be able to speak of the social structures and systems of meaning that are dominate and how they have be mobilized by economically and politically powerful groups and institutions. Thus, I understand culture in the absolute and the particular senses. In addition, alongside my use of *Euro-western culture*, I will also use the phrases *in the West*, *industrialized-scientific culture,* and *the post-industrial West* to refer to the dominate culture context, and its assumptions of materialism, consumerism, individualism, and liberalism, that water crises occur and water-focused advocates must address.[40]

I will also be using the terms *social construction* and *construct,* which I will use interchangeably. As I stated above, *social construction* connotes a process of jointly constructed meanings that are given to entities, phenomenon, and objects, which in turn organizes shared reality. Social constructions may be relatively concrete in what they signify, such as a social construction of doorstop, or may be highly abstract, such as the social construction of world. Indeed, constructions may even themselves become objects to conceptual investigation, such as is done with the philosophical investigation of constructions such as evil. In his discussion of how the constructs *world* and *nature* differ, theologian Gordon Kaufman illuminated a key function of constructions when he stated that they are "created by the human imagination as a

[40] The term *post-industrial society* was coined by French sociologist Alain Touraine. Touraine focused on social movements, and held that structural mechanism and class struggle most shape culture. I have adopted the modifier *post-industrial* to indicate the prevailing culture of some nations whose economies moved away from an emphasis on the manufacturing goods and towards the production of services and a dominance within economies of international finance and multinational corporations.

heuristic device to make possible the ordering and relating of all our other concepts of objects and events."[41] What is most significant to this dissertation is that social constructions are jointly created and recreated through social interaction; they enable and constrain; they convey a great deal of tacit meaning; and they are a conceptual tool that proved organization and meaning to reality. Constructs can become fundamental assumptions about reality, so much so that they become unconscious and unquestioned.

In addition, I will also use the term *concept* to denote a smaller mental element. Several concepts can be aggregated into a larger construct, which has a dependent but different meaning. As with constructs, concepts are neither good nor bad. They are part of the cognitive processes of human intelligence, and important elements of language and communication. As with constructs, concepts are formed through the mental processes of abstraction, which creates meaning from particular instances and from the larger repertoire of meanings available within a language and culture. Thus, concepts are socially constructed and revised through reconstruction. Another way of understanding the relationship between concepts and constructs is that constructs are an assemblage of concepts.

I will discuss the term *practice* in chapter two, but as I have already used it, let me clarify how I apply it to my work. Practice is used to connote an action or, more often, a series of actions that are done regularly and with some degree of mastery, and dependent on taken-for-granted knowledge. I also use the term *water practices,* by which I connote water use or consumption that is contingent on both social structures and material infrastructure as well as socially shared conventions, expectations, and/or meanings. Water practices contrast with

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[41] Gordon D. Kaufman, "A Problem for Theology: The Concept of Nature," *Harvard Theological Review* 65, no. 3 (July 1972): 344.

watered processes and products. By *watered processes* and *watered products*, I mean processes of production, such as irrigation agriculture or computer chip manufacturing, that produce products for market that are disconnected from the consumption of water, such as smart phones or blue jeans.

Lastly, I will use the terms *narrative* and *counternarratives* as cognate terms to "soft" social constructivism that I have adopted and explained here. I came to the terms through Walter Brueggemann's *The Prophetic Imagination*, which is grounded in textual criticism. Later, I began to hear narrative and counternarrative being applied to the constructs of race and gender through community work in Seattle on race and equity, and I realized that these uses of the terms had developed from cultural studies and had been influenced by social constructionism. The usefulness of *narrative* and *counternarratives* to ecotheology is that they focus on humans as a storytelling animal, and that stories are the way that individuals, groups, cultures, and religions organize and make meaning of their shared experiences and engagements. However, it should be noted that when I use these terms, I am not referring to the work of Narrative theory. Narrative theory is a technical school, which I will not incorporate.[42] Having given an outline of my methodology, important terms, and introduced the several preliminary points of this project, I turn next to a discussion of conventional understandings of water crises and their respective solutions.

[42] Four of the major works in narrative theory over the last ten years are the following: Paul Cobley, *Narrative*, 2nd ed., New Critical Idiom Series (London: Routledge, 2013); Mark Currie, *Postmodern Narrative Theory*, 2nd ed. Transitions (New York: Palgrave Macmillan, 2011); David Herman, James Phelan, Peter J. Rabinowitz, Brian Richardson, and Robyn Warhol, *Narrative Theory: Core Concepts and Critical Debates,* Theory and Interpretation of Narrative (Columbus, OH: The Ohio State University Press, 2012); and Alun Munslow, *Narrative and History*, 2nd ed., Theory and History (New York: Red Globe Press, 2019).

Water Crises and What Water Experts Get Wrong

This chapter is focusing on what the water sector does not or cannot address about water crises, which is that, in the water-rich West, water crises are a result of how we use water, which in turn is contingent on how we have socially constructed water. As historian Lynn White, Jr. argued in his seminal speech, "The Historical Roots of Our Ecological Crisis," that because how we engage with nature depends on what we think nature is, the first step in addressing ecological crises is to "clarify our thinking" by critically examining "the presuppositions that underlie modern tech and science."[43] I agree that it is essential to environmental discourses, secular and religious, that we examine, assess, and reformulate the presuppositions we have about water and water issues. Thus, I reiterate the important distinction that there is not one global water crisis. It has become well recognized that many regions around the globe suffer from: a paucity of native water, an absence of infrastructure and adequate water service, water pollution, or a lack of political/economic access to water. However, the water crises in highly industrialized and post-industrial societies are not due to low quantities, water quality or safety, or political/economic barriers to access.[44] In the West, shortages of water are mainly due to over-consumption of water, and that over-consumption occurs largely in the agricultural and industrial sectors.[45] Additionally, I would also like to reiterate that my focus is the ecological water crises of the post-industrial West. Here, I examine the institutional discourses of water sector and government institutions from the perspective water studies and ecotheology. As I stated above in the

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[43] Lynn White, Jr., "The Historical Roots of Our Ecological Crisis," *Science* 155, no. 3767 (March 10, 1967): 1203–1207, 1204.
[44] David E. Newton, *The Global Water Crisis: A Reference Handbook* (Santa Barbara, CA: ABC-CLIO, LLC, 2016), 77–80.
[45] Amy Vickers, *Handbook of Water Use and Conservation: Homes, Landscapes, Business, Industries, Farms* (Amherst, MA: WaterPlow Press, 2012), 330. An excellent discussion that parses the differences between water crises by scale and geographic location is Peter P. Rogers, M. Ramón Llamas, and Luis Martínez Cortina, eds., *Water Crisis: Myth or Reality?* (London: CRC Group, 2006).

methodology section, I will not examine the issues of privatization or WaSH water directly.[46] Each of these is an issue dear to religious environmental movement organizations (REMOs), as they are concerned for social justice and human rights. However, as this is an ecotheological dissertation, my scope is limited.[47]

CONVENTIONAL RESPONSES TO SUPPLY SHORTAGES FROM THE WATER SECTOR

Throughout history, the problem of providing adequate supplies of water has been addressed by either capturing, transferring, or storing water by built systems such as small dams, aqueducts, *qanats*, and stepwells, as well as practices such water harvesting and water recycling.[48] In the twentieth and twenty-first centuries, responses have remained the same but their scale has changed. Large-scale, highly engineered water infrastructure systems, such as dams, inter-regional aqueducts, and water banking emerged in the early twentieth century in the United States.[49] Through many programs of international development organizations, such as the World Bank and the International Monetary Fund, the United States effectively exported this technoscientific approach to the Global South in the second half of the twentieth century.[50] In the last quarter of a century, a shift towards emphasizing conservation has occurred. This is a result

[46] The term *WaSH* is an acronym that stands for water, sanitation, and hygiene. It includes water used in cooking, cleaning, elimination. It is considered to be essential for human health and well-being.
[47] This is a term created by Steven Ellingson. See Ellingson, *To Care for Creation: The Emergence of the Religious Environmental Movement* (Chicago: University of Chicago Press, 2016).
[48] For much of history, wastewater was not as significant a problem for societies as capturing, storing, distributing freshwater. Wastewater became a problem only after urbanization and prosperity in modern, western European and North American cities during the first half of the nineteenth century greatly increased direct water service to urban homes and business. The challenge of the second half of the nineteenth century was to expand sewer system capacity, and to innovate water treatment of drinking water supplies and, in the twentieth century, treatment of wastewater.
[49] Other nations with arid or semi-arid climates and access to capital and stable governs, such as Spain, followed suit in the first half of the twentieth century. However, no other nation built as prolifically as the United States.
[50] Barbara Rose Johnson, "Water, Culture, Power: Hydrodevelopment Dynamics," in *Water, Cultural Diversity, and Global Environmental Change,* ed. Barbara Rose Johnston, et al (Paris, FR: UNESCO-IHP, 2011), 296. Other scholars have noted this as well, including Marc Reiser, Malin Falkemark, and Jamie Linton.

of political and economic realities rather than being grounded in conservation or an ethic of sustainability as large-scale water projects are expensive in both political and actual capital.

Since the 1990s, the public and private professional advisors and managers who oversee water supply and wastewater infrastructure systems—who are commonly referred to as the water sector—have worked to balance or reduce water demand as the primary approach to providing adequate freshwater supplies to cities and farms.[51] The water sector uses what are called *hard path solutions*. These include building new infrastructure, expanding or refurbishing existing infrastructure, limited adoption of new technologies such as desalination, and scant development of water recycle infrastructure.[52] As noted above, in the past several decades, the preferred approach to shortages has become demand reduction and management, such as education campaigns, government rebate programs for fixtures and appliances that reduce water use, alternative pricing, quotas, and water trading, which are termed *soft path solutions.*[53] While many water sector professionals and experts have lauded soft path solutions for fostering sustainability because reduced demand is assumed to have a smaller environmental footprint, the reality is more complicated. For example, water expert Juliet Christian-Smith has written that, despite a great deal of advocacy at the international and national levels, the United States federal government has not taken on many of these solutions, and continues to favor hard path solutions to water supply.[54] Individual states, such as California and Nevada, have embraced and implemented soft path solutions, whereas others, such as Arizona, continue to emphasize hard

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[51] Juliet Christian-Smith, et al., *A Twenty-First Century US Water Policy* (New York: Oxford University Press, 2012), 303.
[52] Peter H. Gleick, "Global Freshwater Resources: Soft-Path Solutions for the 21st Century," *Science* 302 (28 November 2003), 1524–1528.
[53] Alison Browne, "Insights from the Everyday: Implications of Reframing the Governance of Water Supply and Demand From 'People' to 'Practice'," *WIREs Water* 2 (April 2015): 415. Linton, *What is Water*, 210–11.
[54] Christian-Smith, *Twenty-First Century US Water Policy*, 303.

path even while they adopt select soft path solutions. Unfortunately, as constructing water infrastructure is capital intense, and developing or renovation of its distribution and drainage networks disrupts landscapes, water issues tend to attract the attention of individuals and groups seeking political advantage or economic gain. While these conventional approaches to scarcity seem quite reasonable given how essential freshwater is to the residential, municipal, institutional, commercial, industrial, and agricultural sectors of every contemporary industrial and post-industrial nation, they are in fact focused on the wrong thing. The water sector has attended to material factors of water-human engagements, and has overlooked or misunderstood social factors that enables and constrains water practices as well as social transformation.

WATER BLIND AND WATER ILLITERATE

A larger problem is that in contemporary Euro-western culture, we are water blind and water illiterate.[55] What I mean by water blind is that even when we look at water, we do not see it, materially or conceptually. In addition, we do not see the water imbedded in most of the landscapes and goods that we encounter each day. We do not see the virtual water that is part of our food, nor the water footprint that is a part of making most market goods (such as smart phones or jeans), nor do we see the water systems all around us that we harness in order to have reliable water for our homes, municipal spaces, businesses, and farms. What we see when we look at water is what we have reduced water to be: an aesthetic ornament, a drinking water stockpile, or a utilitarian good that flows from our tap. In addition, we are water illiterate. We do not understand the complexities of our water laws or the governance at the local, state, or

[55] I am not the first to use the term *water blindness*. Swedish hydrologist Malin Falkenmark used the term in "The Massive Water Scarcity Now Threatening Africa: Why Isn't It Being Addressed?" *Ambio* 18, no. 2 (1989): 112–18. www.jstor.org/stable/4313541. She returned to the idea in "Approaching the Ultimate Constraint: Water Shortage in the Third World," in *Resources and Population: National, Institutional and Demographic Dimensions of Development*, eds. Bernardo Colombo, Paul Demeny and Max F. Perutz (Oxford: Clarendon, 1996): 71–81.

national level. Water is plentiful in much of the West, and in the places where it isn't plentiful, governments have stepped in to create infrastructure that gives the illusion that water is abundant and is only modestly valuable.

The sources of our blindness are multiple, and they reinforce one another. First, in the West, due to the historic patterns that I will discuss in chapter two, we have come to think of the development and management of water infrastructure as the domain of professional engineers, hydrologists, and government administrators. Second, as a result of the reliability of the highly engineered, state supported, and reliable water infrastructure, water supplies have come to be socially constructed as mundane and non-salient. Water is plentiful in much of the West; and in the places where it isn't plentiful, governments have stepped in to create infrastructure that gives the illusion that water is abundant and is only modestly valuable. In a sense, we have the privilege of not needing to think much about water because in the West we are water-rich or, by the standards of much of the rest of the world, just rich. Hence, even when we look at water, we do not see it. What we see when we look at water is what we have reduced water to be: an ornament, a resource, or a utility that flows from our tap. In addition, we do not see the water imbedded in most of the landscapes and goods that we encounter each day.

In addition, we are water illiterate because we do not know how to deconstruct the water that we think with, nor can we decode the linkages between water and watered products. Thus, we do not see the virtual water that is part of our food, nor the water footprint that is a part of making many market goods such as smart phones and denim jeans, nor do we see the water systems all around us that deliver freshwater to homes, businesses, industry, agriculture, power plants, or recreational facilities. Further, we do not understand the complexities of our water laws or the governance at the local, state, or national level. The water that we think with is the same

everywhere for all people in the West. This is another way that water is homogenized. When scarcity is a technical/scientific issue, it allows the non-experts to brush off concern. Hence, responses to water crises, both in the wealthy but water-poor regions of the West as well as the water- and infrastructure-poor regions around the globe, have emphasized technoscientific, neoliberal economic, and household-level responses to shortages and sustainability. What is called for is making water visible and legible, which I will discuss in later sections and in chapter two.[56] But first, I will review the most dominant responses by the water sector and then the analysis of them by water scholars.

PROMETHEAN APPROACH—THE BASIS OF WATER SECTOR APPROACHES

In addition to the water sector, there are many water experts, from the fields of engineering and applied science as well as from economics and law, who have written extensively on water shortages and proposed a variety of hard and soft path interventions.[57] In *Water 4.0*, engineering professor David Sedlak writes that the modern urbanized regions that are short of water should put their energies towards technology innovations that create "new" supplies, such as treating wastewater for tertiary uses (recycling) and allow for decentralized disruption systems. Sedlak explains that there have been three previous revolutions in how human societies have managed freshwater supplies, which each were technological innovations. As human societies have done before, Sedlak states, so much we do again by re-inventing our existing technology to use the same water two and three times. Sedlak's recommendations reflect a faith in technoscientific

[56] I first became aware of this point from reading Veronica Strang's *The Meaning of Water*, which explains that as water infrastructure historically developed, flows of water into and out of homes came to be hidden from view as the outcome of the development of water services, such as direct connections and domestic sewer lines. Later, I saw a similar theme—of water being obscured, hidden, or invisible to the post-modern mind and the need for intention to make it visible once again—in the work of scholars such as Jamie Linton, Liz Roberts, and Catherine Philips.

[57] See Brian D. Richter, *Chasing Water: A Guide for Moving from Scarcity to Sustainability* (Washington, DC: Island Press, 2014), 75–96; Charles Fishman, *The Big Thirst: The Secret Life and Turbulent Future of Water* (New York: Simon and Schuster, 2012), 252–256; Peter Rogers and Susan Leal, *Running Out of Water,* 2.

interventions above others that is commonplace among experts, policy makers, and water sector professionals.[58] Another theme common among water experts is the presumed potential for the free market to reduce water demand. In admonishing the water industry to revise their traditional reliance on technology or large-scale engineering schemes, legal scholar Robert Jerome Glennon remains captive to the accepted belief that either market-based interventions or a human rights legislation can transform water use practices.[59] While Glennon does not take a supply-side approach to understanding water problems, he believes that free markets are effective tools for demand management. Similarly, senior water economist David Zetland argues that the price of water, both residential and bulk water, should be based on supply and demand, or as he states should reflect scarcity.[60] Zetland does address ecological concerns by acknowledging that water in nature provides ecosystem services, such as healthy rivers, parklands, well-being of living in green environments, and therefore should be accounted for as part of the calculus for establishing water rates. Theoretically, waters from more ecologically sensitive or intensively subscribed regions would cost more for rate-payers, and in turn would reduce demand.

Several water experts, such as Peter Gleick, Sandra Postal, and Brian Richter suggest that more innovative and effective solutions to increasing available freshwater supplies lie in significantly improving the existing water systems, reducing demand, and, most of all, in recycling greywater and even black water as "new" supplies. In *Chasing Water*, Richter states that tradition interventions such as water storage and water transfer have reached the limits of

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[58] David L. Sedlak, *Water 4.0: The Past, Present, and Future of the World's Most Vital Resource* (New Haven: Yale University Press, 2014), 239–272.
[59] Robert Jerome Glennon, *Unquenchable: America's Water Crisis and What To Do About It*, 289–292, 307–8.
[60] David Zetland, *The End of Abundance: Economic Solutions to Water Scarcity* (Amsterdam: Aguanomics Press, 2011), 75–77. Zetland uses the phrase "the end of abundance" to frame a narrative of not just water shortages but extensive, enduring water scarcity.

their ability to affordable and sustainable create additional water supplies. However, Richter is sanguine about the potential of large-scale water recycling and de-centralized systems. Another well-known expert is Peter Gleick, who has been a longtime proponent of the soft path solutions, both in the context of his home state California and globally, and has been a staunch advocate for taking into account environmental as well as human freshwater needs as essential to soft path solutions. Gleick's approach has become widely accepted as prudent and environmentally responsible. While Gleick's approach is intended better than conventional approaches, most notable in giving attention to freshwater needs of ecosystems, it important to note that Gleick's work remains firmly in the technoscientific camp.[61] While these Promethean approaches to water shortfalls on the surface seem to be aligned with environmental ethics of sustainability and justice, they have several shortcomings, which have been addressed by water studies. Let us now consider their criticisms.

Proposed Critical Approaches to Water Crises from the Water Literature

Water scholars have been critical of the approaches to shortfalls most advocated by the water industry and water policy experts**.** To begin, I will give a brief overview of criticism from the water literature of the water sector's focused on infrastructure and volumetric supplies. In addition, several water scholars have been critical of demand-reduction approaches to shortages that depend on economic interventions or education campaigns as ineffective as water-use practices change more for lower-income rate payers (who typically use less water to begin with), or as having limited durability as rate payers most often increase their water use over time.[62]

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[61] Peter H. Gleick, ed. *Water in Crisis: A Guide to the World's Fresh Water Resources* (New York: Oxford University Press, 1993.

[62] Liz Roberts and Katherine Phillips, eds., introduction to *Water, Creativity and Meaning: Multidisciplinary Understandings of Human-Water Relationships* (New York: Routledge, 2018), 27–29; Veronica Strang, *The Meaning of Water* (Oxford: Berg, 2006), 45. See also, Maria Kaika, "The Political Ecology of Water Scarcity: The 1989–1991 Athenian Drought," in *In the Nature of Cities* (London: Routledge, 2006).

Other water scholars have been critical of demand-management schemes because they do not address the social practices that drive water use or the larger market forces that drive the production of water-intensive crops and consumer products.[63]

Water scholars are critical of the reliance of the water sector on technology innovations and scientific breakthroughs. Others water scholars have gone further to criticize the very idea of conservation because of what is known as Jevons Paradox, which is an explanation of why increases in efficiency or capacity paradoxically lead to increases in demand or use.[64] In the case of water infrastructure, Javons Paradox predicts that irrigation modernization or infrastructure renovation produce greater efficiency and seemingly would reduce demand but actually lead to greater demand. Lastly, there is a criticism that, given information and incentives, people will shift to more sustainable water use practices.[65] This analysis is an important contribution to water-focused advocacy because it shows that presuppositions of technology and science have already shown themselves to be inadequate to the task of responding to water crises.[66] An even more important contribution of water studies is their argument that water crises, water-human relations, and water itself are socially constructed.

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[63] Claire Hoolohan and Alison L. Browne, "Reimagining Spaces of Innovation for Water Efficiency and Demand Management: An Exploration of Professional Practices in the English Water Sector," *Water Alternatives* 11, no. 3 (October 2018): 957–978, and Elizabeth Shove, "Efficiency and Consumption: Technology and Practice," *Energy & Environment* 15, no. 6 (November 2004): 1053–1065. https://doi.org/10.1260/0958305043026555.

[64] Aurélien Dumont, Beattiz Mayor, and Elena López-Gunn, "Is the Rebound Effect or Jevons Paradox a Useful Concept for Better Management of Water Resources? Insights from the Irrigation Modernization Process in Spain," *Aquatic Procedia*. https://doi.org/10.1016/j.aqpro.2013.07.006.

[65] This criticism sits alongside criticism from environmental ethics and ecotheology that contends that within industrialized Euro-western culture, the need for scientific information is not the crux of the problem. It is rather that there is a lack of political or social will to face the ecological crisis. An early instance of this criticism is Max Oelschlaeger, *Care for Creation: An Ecumenical Approach to the Environmental Crisis* (New Haven, CT: Yale University Press, 1994), 40.

[66] The term *water-focused* is my own. I have not seen it used by other scholars within the water literature or by advocate to describe themselves.

Water scholars are critical of the water sector's reliance on market capitalism. Water scholars such as Alison Browne, Maria Kaika, Elizabeth Shove, and Veronica Strang have demonstrated the limitations of marketplaces to reduce demand and have offered criticisms of the orthodoxy of growth. Some water scholars have argued that models of consumer behavior are too simplistic while others argue that market growth is too intrinsic to water sector conceptualizations.[67] Additionally, water scholars have been critical of market-based interventions as inadequately to change water use long-term.[68] They have find fault with the water sector's acceptance of existing water demand, or the assumption that population growth necessarily increases water demand, as a necessary cost of economic development and essential to regional social stability.[69] They argue that experts and policy professionals fail to be critical of key assumptions, such the underlying assumptions of free market capitalism. Katherine Philips and Liz Roberts write that there is an unwillingness in the water sector to address late-stage capitalism.[70] Strang agrees when she writes, "It is visions of development, growth, and empowerment that drive major infrastructural endeavors and lead to contests over control; and it is the beliefs and values of water users, and the meanings that they encode in water, that direct everyday practices."[71]

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[67] Hoolohan and Browne, "Reimagining Spaces of Innovation for Water Efficiency," 971–973.
[68] Alison Browne, "Insights from the Everyday: Implications of Reframing the Governance of Water Supply and Demand From 'People' to 'Practice'," *WIREs Water* 2 (April 2015): 418–419; Elizabeth Shove, "Social Theory and Climate Change: Questions Often, Sometimes and Not Yet Asked," *Theory, Culture & Society* 27, no. 2–3 (March 2010): 277–288. doi.org/10.1177/0263276410361498.
[69] Strang, *Gardening*, 2. See also Karen Bakker, "A Political Ecology of Water Privatization," *Studies in Political Economy* 70, no. 1 (March 2003): 35–58 and, for a more detailed examination, David Mosse, *The Rule of Water: Statecraft, Ecology and Collective Action in South India* (Delhi: Oxford University Press, 2003).
[70] Roberts and Philips, *Water, Creativity and Meaning*, 26–32.
[71] Veronica Strang, "The Social Construction of Water," in *Handbook of Landscape Archaeology,* eds. Bruno David and Julian Thomas (Abingdon: Routledge, Dec. 15, 2008), accessed Oct. 29, 2017, Routledge Handbooks Online.

Water scholars are critical of the focus on transformation of water practices at the individual or household level rather (e.g., education campaigns sponsored by governments and water companies) rather than seeing water shortfalls as connected to system-wide demands that are better addressed at the community level. One of the more overlooked aspects of water shortage crises is an examination of which sectors use and consume the most water. Much of the public and policy discourses have directed their attention to the residential and municipal sectors, yet these sectors account for less than ten percent of use globally, and in the West still account for less than half of the overall water use. In addition, residential and municipal water use is much less consumptive than agricultural and industrial water use. Agricultural use accounts for seventy percent and industrial uses account for twenty-two percent, while domestic uses account for eight percent.[72] Water expert Sandra Postel address this distinction in her recent book *Replenish*, where she indicated the significance of understanding water demand in systemic terms. Postel explained that: "when the water consumed by crops in the field is taken into account, [food and beverage] products are among the most water intensive to produce."[73] What this demands is a more in-depth analysis of the connections between production and demand of "watered" products. Are watered products in high demand because there is a long-standing market for them? Products such as bottled water, pistachios and almonds, and denim clothing all have manufactured demand, which means that they are not products for which there is no substitute but are consumer products that have a high profit margin and are in demand by

[72] Ryan Cahill and Jay Lund, "Residential Water Conservation in Australia and California," *Journal of Water Resources Planning and Management* 139, no. 1 (2013): 117–21. doi:10.1061/(ASCE)WR.1943–5452.0000225. For a forthright discussion of this issue and concise overview of major water issues more generally, see "For Want of a Drink," *The Economist* Special Reports, May 20, 2010, http://www.economist.com/specialreports/displaystory.cfm7story.

[73] Sandra Postel, *Replenish: The Virtuous Cycle of Water and Prosperity* (Washington, DC: Island Press, 2017), 243.

consumers due to effective marketing campaigns.[74] Thus water-demand cannot be assumed to be fixed but must be challenged to assess whether the demand is linked to other salient and volatile factors. Water scholars have examined how water demand is driven by social practices, such as social expectations of cleanliness and social status (e.g., having a big home, having appliances). More recently, discourses are accounting for this distinction opaquely through the concept of water footprint.[75]

Lastly, as I mentioned in the methodologies section above, there is a pervasive reliance on models of social transformation from the fields of psychology and economics that is problematic. Many policy experts and water professions in the water industry have not been critical enough of the assumption that knowledge of water problems can effectively lead to transformation of water practices or, alternatively, the durability of economic incentives or disincentives to transform practices.

THE HEART OF THE MATTER—DISTINGUISHING WATER FROM WATER CONSTRUCTS

Besides being critical of the reliance of scientific, economic, or individualistic approaches, some water scholars are critical of proposed interventional for another reason. Scholars such as Karen Bakker and Jessica Budds, have argue water scarcity itself is produced.[76] They explain that this is because conventional hydrological analysis, management practices of the water sector, and public policy and law take into account material factors of shortfalls, which ignores socio-political and economic factors that in many instances are highly significant. They have used the

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[74] Here, where I refer to bottled water as non-essential, I do not mean water that bottled for use in emergency situations, such as in the aftermath of natural disasters, or in circumstances such as the failure of water infrastructure, such as the city of Hinkley, California.

[75] The concept of a water footprint was devised in 2002 with Arjen Hoekstra, a professor of water management, and co-founder and scientific director of the Water Footprint Network.

[76] Karen Bakker, "Privatizing Water, Producing Scarcity: The Yorkshire Drought of 1995," *Economic Geography* 76, no. 1 (2000): 4–27; Jessica Budds, "Contested H_2O: Science, Policy and Politics in Water Resources Management in Chile," *Geoforum* 40, no. 3 (2009): 418–430.

term *produced* to underscore that the shortfalls are due to the material and cultural factors controlled by humans not climate or hydrological factors. Budds, for example, has shown that in Chile in shifts in agricultural production that favored fruit growing, limitations in hydrological assessment technology, and reform of the water code produced shortages in available water supplies for peasant farmers in the La Ligua valley.[77] The farmers most impacted by the shifting waters were those farming in the middle of the valley who were dependent on pumping groundwater, and least impacted were the newer fruit plantations along the valley's steep sides. At first glance, it seemed that groundwater supplies were being over-extracted by the older, smaller farms in the valley's center that relied on pumped groundwater. However, later analysis showed that water that had previously run down the valley's slopes and into the alluvial central plain was being diverted by newer fruit plantations during the dry years of the mid 1990s, when growers needed to irrigate groves that had previously been rain-fed. In addition, until 2003, the water authority had only allocated surface water rights. The hydrological model established by the water authority had poorly mapped the variability of groundwater flows as well as recognizing the interdependency between the pumping groundwater on the valley's slopes and shortfalls in the surface water in the valley's center. The allocation of new groundwater rights was overly restrictive, and wound up disadvantaging the smaller, poorer farmers in the valley's center and advantaging the plantations on the slopes. Further, estimates of available surface and groundwater by the government water authority were inaccurate, exacerbating tensions among valley's water-haves and water-have-nots. Thus, what seemed to be scarcity due to higher demand by the smaller, central farms and climate variation was due to shifts in the international agribusiness markets, which in turn altered water flows on the slopes of the valley. The structure

[77] Budds, "Contested H_2O," 421–422, and Jessica Budds, "Whose Scarcity?," 59–68.

of the water code favored certain locations and farming practices, and did not protect older farmers from new water abstractions "upstream." Budds concluded that the existing epistemological models for hydrology, agricultural practices, and water governance had not accounted for economic and political structures that produced and then reproduced scarcity for older farms and abundance for newer fruit plantations. Except for two dry years in the middle of the 1990s, the precipitation that fell in the valley had not changed, nor had the fluvial dynamics of the alluvial landscape or that of the valley's aquifer. What had changed were what Budds calls the *hydrosocial* factors in the valley, by which she means the everyday practices that are shaped by political, economic, and social structures of the La Ligua valley. Thus, Budds explains, scarcity may be produced by material and climate factors but is also produced by the power relations that configure water use, water governance, and even hydrological science.

THE WATER THAT WE THINK *WITH*

What Budds is driving at is that scarcity is not simple. Indeed, Budds and others have argued that scarcity is produced because of how water infrastructure systems, and even water itself, have not only been produced but that water scarcity is socially constructed in the West.[78] How we understand shortfalls in available freshwater depends on the social construction of water-demands of cities, agriculture, and industry, which in turn are contingent on a consumptive industrialism and capitalist consumer culture.[79] In water industry and water policy discourses, freshwater sources are understood and represented mainly in anthropocentric terms. Rivers, lakes, aquafers, and wetlands are not represented as bodies and flows of water that are dynamic

[78] The distinction between produced and socially constructed is technical. When water studies use the term produced, they are indicating more immediate causes, such as water law. The factors that lead to produced scarcity are themselves socially constructed, such as riparian water rights or prior appropriation rights. Jamie Linton makes such a case in *What is Water?*, 70–71, 200.
[79] Karen Bakker, "Privatizing Water, Producing Scarcity," 4–27; and Budds, "Contested H_2O," 420–427.

entities or as the matrix of life for multiple beings. On the contrary, they are understood and represented as quantifiable natural resources or as an economic goods, delivered to either rate-payers or irrigation districts. Indeed, water scholars explain that water on the whole has been socially constructed as a homogenous, material object that is exogenous to culture.[80] In chapter two, I will discuss the historical process that led to the post-modern, Euro-western construction of water in more detail. However, here I want to introduce an important insight of water studies. The water that we think with is not really water but is rather a circumscribed construct that has been adopted from the engineering and natural sciences. In the West, water has been understood and represented almost exclusively as a material object. Water scholars concur that, in the post-industrial, urban West, water has come to be socially constructed in terms of quantifiable utilitarian object and economic commodity.[81] The ways of knowing water as an object external to human culture, and largely as an inanimate, utilitarian object have become distractions, at best, and barriers, at worst. In general, the water that we think with is either a chemical formula that signifies an ideal water molecule (H_2O), a reification of water flows in channels along the earth's surface (rivers), or is the water that flows when we turn the tap. Hence, in the West, water has become "a mixture of two chemical elements in a liquid aggregate state."[82] Moreover, when we think about water, we do so in functional terms. We bring to our mind the water we drink, the tap we open as we step into a shower, the fountains we decorate both public and private spaces with, or the rejuvenating waters along the shores of rivers, sounds, bays, and oceans that we visit. We

[80] Joachim Blatter and Helen Ingram, *Reflections on Nature*, 35. This is also discussed by Matthew Gandy in *The Fabric of Space* and by Veronica Strang in "Re-imagined Communities: A New Ethical Approach to Water Policy," in *The Oxford Handbook of Water Politics and Policy*, eds. Ken Conca and Erika Weinthal (New York: Oxford University Press, 2016).
[81] See Gandy, *Fabric of Space*; Linton, *What is Water?*; and Strang, *Meaning of Water*.
[82] Hans Peter Hahn and Karlheinz Cless, "Introduction," *People at the Well: Kinds, Usages and Meanings of Water in a Global Perspective* (Frankfurt-am-Main: Campus Verlag, 2012), 10.

do not think of water in relational terms. Therefore, we do not see rainwater flowing along a boulevard and into a storm sewer, picking up debris and pollution, which will ultimately flow into waterways and onto the world's oceans. We do not think of the water that flows from our laundry drains and bathrooms, which carry microfibers and microplastics into the same oceans. However, as I will discuss in chapter seven, we must think relationally about water because it is a relational entity.

I will return in the next chapter to discuss the consequences of the hegemony of a conventional construction of water and will explore the historical processes of how water came to be circumscribed and the reconstructions of water offered by scholars. Before doing so, I want to highlight three points that I just made as they will be so foundational to the rest of this dissertation. First, scholars agree that water crises are sometimes produced, which ultimately depends on the circumscribed water that we think with. Water has been socially constructed as a homogenous, asocial, material object. Second, water scholars make clear that in the post-industrial West, we are not cognizant that the water that we think with is a construct nor are we able to decode them. Water scholars are critical of modern and post-modern water constructs and how Euro-western culture is unaware of their regnant power. Third, scholars agree that how we think of water shapes how we engage with water. Scholars agree that how we think of water is not water, but a Euro-western social construction of water. Thus, water scholars explain to respond effectively to water crises, we must first understand that water crises are social and political issues first. According to geographer Jamie Linton: "Representing water as something devoid of social content—that is, as a part of nature, a natural resource, or commodity—allows nature to be used as the explanation for water scarcity instead of, for example, the lopsided

distribution of water services in cities…."[83] Water scholars have contended that the post-industrial West can never change everyday water practices without understanding water and how it is different than the water that we think with. In other words, they are stating that an essential action for changing practices is to pay attention, to become aware. Yet, they are not saying that knowledge itself that will change practices but an appreciation of how the water that we think with shapes and limits our actions. Water scholars, in effect, are echoing the words of Lynn White, Jr. when he stated, "What people do about their ecology depends on what they think about themselves in relation to things around them."[84] Water scholars are pointing to the significance of awareness and comprehension to the process of social transformation. I argue that it is analogous to the role Brueggemann describes that prophets have, which is to bring to attention the shortcomings and mistakes of the community. Thus, they say the best approach to water shortages and pollution is to reconstruct water, which demands first that we grasp and comprehend both water and the water that we think with.

In chapter two, I will also discuss the work from water studies that explores what water is as opposed to the water that we think with. For now, I will offer a provisional definition of water. Water is both material and non-material, which is due to the innumerable ways that human societies draw water into the political, economic, religious, and social structures of their worlds and those waters becomes entangled with our everyday practices. Thus, water is never just water. Because our everyday practices are configured by bodies and flows of water, and also because we escribe meanings into those practices and into the watered products of those practices, water is also a cultural entity. Anthropologic Stefan Helmreich perhaps best summarizes water's

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[83] Linton, W*hat is Water?,* 70.
[84] Lynn White, Jr., "Historical Roots," 1204.

ontological fluidity when he writes, "Water oscillates between natural and cultural substance, its putative materiality masking the fact that its fluidity is a rhetorical effect of how we think about 'nature' and 'culture' in the first place."[85] Having discussed the critique by water scholars of the current situation of "water crises" and highlighting the contributions their analysis of water, my next task is to describe my own critique of conventional approaches and the discernment of "seeing water" and "reading water."

Ecotheological Analysis

It is important to note that much of the literature from the water industry, the water policy sector, and from the academy is not focused on water issues as ecological issues.[86] However, as an ecotheologian, my central concern is to understand water issues through the lens of sustainability, relationality, covenant, equity, and compassion. As I stated above, ecotheology is a lament, a judgment, and a hope, which taken together reimagine an alternative to the everyday practices that are unsustainable. While one of ecotheology's tasks is identify ecological concerns, the more important criticism that it offers is the lament that we have become comfortable and unseeing. We are comfortable driving cars that pollute both water and the air, do not question why poor communities have unsafe drinking water, and do not see the damage imposed on ecosystems by our post-industrial, urban and suburban everyday practices. We have become comfortable with our material, asocial constructs of water, and technoscientific approaches to water crises. Prophets purposefully make us uncomfortable. Their lament and judgment call out the community for allowing or causing injustice, transgression, and sin. But, Brueggemann

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[85] Stefan Helmreich, "Nature/Culture/Seawater," *American Anthropologist* 113, no. 1 (2011), 132. doi: 10.1111/j.1548-1433.2010.01311.x.

[86] A great deal of the literature at the municipal, regional, and international levels is focused on freshwater supply for residential, commercial and industrial uses as a social, political, or economic issue. Water as a sanitary, drinking water, and hygiene issue also dominates discourses at the international level.

writes, prophets also offer energizing hope by pointing to an alternative. Ecotheologies can also offer energizing hope by identifying alternative possibilities, but such alternatives must be proceeded or accompanied by a lament and judgment. The lament functions to raise awareness, not only of the problem of water overuse and pollution but also that the water that we think with has skewed our ability to see or decode water. The judgment functions to assess whether ecotheologians and REMOs are able to discern and decode water and water-human relations. Below, I will offer three criticisms of the water literature from the perspective of ecotheology. In response to the first criticism, I will propose a grammar for understanding the distinction between water knowledge and water itself. Following that, I discuss that water scarcity is a social construction that depends on constructs of water as homogenous material, sometimes a resource, sometimes a commodity.

Our modern constructs of nature and humanity emphasis individualism and independence, and thus approaches to water crises are mainly directed towards influcing change at the level of the household. We overlook interconnection and interdependence. We are disconnected from farms and factories, so we don't see that water is part of the processes that produce many consumer goods, such as meat (especially beef) and microchips.

GRAMMAR FOR WATER STUDIES AND ECOTHEOLOGY

A recurring problem within the water literature is a lack of explicit distinctions between water knowledge, water itself, and water-human relations. A great volume of the water literature is focused on exploring the character of water-human relations or in theorizing water. In these texts, authors state that water is a social construct and then quickly shift to their central discussion. The proposition that the water we think with is a socially constructed idea of water and not water itself has become widely accepted among water scholars. The further proposition that tacit water knowledge in a sense has its own reality gets glossed over or is lost. However, it

is an important claim and functions as a lament and judgment to the extended community of water-focused REMOs and ecotheologians. Of course, the main reason that discourses do not distinguish between water and water knowledge is that Euro-western culture is water illiterate. Equally important is that water crises are socially constructed. It is my opinion, the reason that the distinction between water knowledge and water is often neglected is that we lack readily available language to explain and articulate it.

I have stated that a core problem is that Euro-western culture is blind and illiterate. Therefore, a paramount goal of water-focused ecotheology should be to make water visible. I have also stated that a necessary action for countering and reversing water consumption and pollution is making water legible. This entails becoming aware of and fluent with the dominant social constructions of water, which then allows for transforming discursive practices. Changing everyday water practices is contingent on transforming discursive practices, which can happen best through water awareness and water literacy.[87]

To make water knowledgeable and water itself visible, we need a heuristic that organizes our conceptualizations and gives us a vocabulary to articulate that the water that we think with is not water but ideas of water inherited from twentieth century Euro-western culture. What I suggest is calling this heuristic a water grammar. In linguistics, *grammar* is usually understood as a system that organizes the constituent parts of a language. Moreover, a grammar makes intelligible a language's syntax and morphology. A water grammar similarly distinguishes

[87] I arrived at the terms *water awareness* and *water literacy* on my own. I don't believe that I have invented these terms, but thus far I have not seen other scholars or activists employ them. I initially began to use these terms to differentiate between activists and scholars who were aware of water issues but were unaware of Euro-western social constructions of nature, human nature, or water, or the ramifications of such constructions. Reading literacy involves learning to recognize symbols and decode them in ways the "reader" has previously not done. Water literacy is similar. Likewise, *water knowledge* and *water grammar* are terms that I have not seen prior to my own use of them.

between the main categories of discourses on water. The categories are: water knowledge, water itself, and water relations. In the first category, water knowledge, that is the set of social constructions regarding the existence, movement, transformations, and relations of water above, across, and below the surface of the earth, is differentiated from those actual waters. In the second category, what is distinguished and organized different forms and dimensions of water, such as material, conceptual, and ideational waters. The third category distinguishes how water relates to other abiotic and biotic entities that have interactions and form entanglements with water. Within the third category there is a subset of water-human relations that distinguishes between water itself, water use, and watered products or processes. A grammar of water is useful to account for how water relates to other elements, which might be thought of as its syntax, and how water is inflected by its transmutability and relationality.[88] The purpose of a grammar of water is not only to make water visible and legible but also the structures of how we conceptualize and articulate water, and how water and human communities are interconnected and interdependent. Water is an exceptionally complex subject, which is made all the more difficult when humanity, nature, environmental ethics, and social change are added to the field of study. In so many ways, any rigorous discourse on water must be a very artificial act, that is intentional, abstract and particularly. To facilitate alternative constructions of water, which in turn make room for alternative practices, communities will need to readily different between water knowledge, water itself, and water-human relations. In chapter two, I will offer model for the process of re-thinking water (which I first introduce in the next section) and will address what the process might entail in chapter eight. Having a grammar for water will provide a

[88] Here, I am using *inflection* to mean any of denotations or connotations that express different functions or attributes of water, such as location in the hydrosphere, contact with other biotic or abiotic entities, or potability.

necessary organizing frame of reference, and may also be useful to others engaged in discourses on water conservation, protection, and restoration.

SCARCITY VERSUS THIRST

My own view, from having reviewed the literature from the fields of hydrology, political ecology, anthropology, geography, history and ecotheology, is that within discourses on water issues, there is a social construction of shortages as "water scarcity." I have touched on this above but wish to give more detail here. A bulk of the literature, both in the academic and popular discourses, centers on volumetric abundance or scarcity. Indeed, it has commonly been noted that the total volume of water on Earth is fixed and that water cannot be created. While it is factually true that there is a fixed volume, emphasizing it misrepresents the cultural practices that have led to shortages. Hence, water scarcity is constructed as caused by population rise and economic development, which are each presupposed as inevitable. This subtle assumption is significant to note because the frame of inevitability softens the anthropogenic origin of the water shortages. Additionally, scarcity is often constructed as a national problem when it is always a local or regional problem. Further, it is framed as "running out" of water, which is rarely the case. When supplies dwindle, water becomes more expensive, inconsistently distributed, and less accessible to the most vulnerable in a population. Most of all, scarcity is sometimes bundled with ecological issues but it is framed as a people-problem. Rarely are shortages understood as extensively impacting flora and fauna. Usually the narrative within discourses about shortages is about people versus fish, or people versus upstream/downstream non-human habitats. Water shortages must be understood as a humanitarian, equity, and ecological issue.

Within the water sector's literature, there are many expectations and assumptions that go unacknowledged or unchallenged, which effectively frame water problems as caused by nature

or by water itself. There is no recognition of the dualism inherent in the dominate construct of scarcity. Indeed, there is an abiding expectation that nature is to be put to use for human well-being and prosperity. Imbedded in much of the language of the water sector, such as terms like *reclamation* and *water security*, are assumptions that humans put water to good use while in nature water is wasted when it simply runs over or beneath the land.[89] Rather than there being a dearth of water, shortages are rooted in the socially accepted, indeed customary, overconsumption of water, or more properly, there is an over abstraction/withdrawal of water in relation to the ability of recharge by natural or built processes. Thus, recycling of water is an excellent strategy but it is of limited use. Rather than use the language of scarcity, I suggest a shift to the language of thirst. It is true that there is a fixed amount of freshwater on the planet. Yet it is equally true that Euro-western industrialized and post-industrialized cultures uses more water, and uses it in a manner inappropriately to many regions, such as growing cotton and alfalfa in arid and semi-arid regions.

WHEN WATER IS NOT WATER BUT ELECTRICITY AND COFFEE

In addition, how we socially construct water and built water systems, water use, and water products (processes and products that are dependent on intense use, even consumption, of water) also leads to ambiguity, conflation, and reification. As water scholars have indicated, we have dualistic social constructions of water that divorce water from built water systems, and we have engineered our water systems to be so safe, reliable, and plentiful that we have made water mundane and non-salient. I would make the further distinctions that we say we do not value water, yet this is not true. It is more that we fail to see past easy ideas such as "majestic oceans" and "wild rivers" (that is, that we have romantic, anthropocentric constructions of bodies of

[89] Kaika, "Political Ecology of Water Scarcity;" and Roberts and Phillips, *Water, Creativity and Meaning,* 6.

water) and the simplified understanding of how water flows through natural and built water systems continually. Further, we have allowed ourselves to uncritically consume agricultural and commercial products that are grown or manufactured through intensive consumptive use of water. Lastly, we fail to distinguish water use from water products. We need an apparatus or method that can shift us from a water blind and water illiterate culture to one that can both see and read water systems.

A central task of a water-focused ecology should begin with making water, and all its related cognates, visible and comprehensible. In the West, we are water blind because we don't understand that we have absorbed water into our built environment to the point that water becomes invisible. Anthropologist Terje Oestigaard explains this point well when he writes:about what water is by stating, "Without incorporating water as a relevant variable for understanding people's identities, cultures and religions in the past and present, one misses crucial aspects of historical agencies and structures at work in society and religion with implications for future developments."[90] In chapter two, I will discuss the historical processes that reconfigured how water entered cities and homes as well as the management of built water systems effectively disconnected flows of water from their sources, and hide those flows in pipes underground and behind walls also reshaped what we think water is and what the proper relations between water and culture should be. Running water came to be understood as a natural part of a habitable building.

Likewise, water consumption is hidden from view by practices of agricultural, industrial, and electrical-power production. To make water visible again, we must begin awareness, so we

[90] Terje Oestigaard, introduction to *Water, Culture and Identity: Comparing Past and Present Traditions in the Nile Basin Region* (Bergen: BRIC, 2009), 11.

can see what we think water is, and with decoding water, so that we can make sense of the social construction of water. Additionally, we will need to dis-aggregate and de-mystify water systems and water processes (such as energy production). Within these steps, we will need to develop a grammar of water for the purposes of discussing the highly complex intricacies of water issues in an effective and non-dualist manner. Each of these processes will allow us to see, read, and hear water in alternative ways. I will address these processes in more detail in the next chapter.

Process of Reimagining Water—Water Awareness and Water Literacy

What I am suggesting here is a theoretical process, that of reimagining water as more than homogenous, exogenous material object. Such a process enables advocates to comprehend and in turn be able to communicate how water crises, water-human relations, and water itself are complex. I am also describing what water is and its multiple ontologies, which occur because water is both conceptual and material, and through engagements with culture, water becomes entangle. Some have conceptualized this process as producing entangled entities and meanings, which in turn shape and are shape by water and culture.

How do we re-think water? We need a framework to understand and to rethink water and water systems. Once we understand that (1) water crises are different from place to place, and the result of how water is used; that (2) how we use water is inextricably linked to how we imagine water and the meanings that we invest in water, water-use, and water-products; and (3) that our the social constructions of water and how we interact with flows and bodies of water are the result of social and historic processes, then it becomes clear that any approach to theorizing water or water conservation must first understand what water is and how we engage with water bodies and built water systems. Only in doing so can any comprehensive and effective conservation begin.

Water literacy also is able to distinguish between flows of water, embedded or subsumed water, and water processes (uses). Following my discussion of this organizing framework, is an energizing hope: developing alternative water constructs and counternarratives. Above all, water literacy is the ability to decode the many constructions of water crises, waterscapes, and water systems, to understand the connection between constructs and water itself, and understand how meanings encoded into water may be transferred to other processes and products. Water literacy offers a way to comprehend the constructs and is the foundation for reconstructing circumscribed constructs. Here, water literacy is contrasted with water expertise, which depends technological solutions, public information campaigns, or market interventions, and conventional understandings of everyday practices and social change.

Shema, Israel—Eyes that See, Ears that Hear

I have used the analogy of blindness and illiteracy to connote what is missing in Euro-western discourses on water crises, water-human relations, and water itself. I would extend this analogy to describe the corrective or rehabilitative process (social transformation) that REMOs seek to initiate. In terms of water advocacy, overcoming blindness would necessitate more than mastering cultural and scientific knowledge on water and water issues. Rather, to become "sighted," individuals and communities need to pay attention, and more specifically to pay attention to how they pay attention to water and water systems. Coupled with intentional attention, becoming literate would consist of recognizing patters and developing the ability to decode patterns and reveal meaning. As with reading literacy, there is a dialectical relationship between intentional awareness of water and decoding its meanings and relations to the world. As a shorthand, I use the terms *water awareness* and *water literacy* for these two complimentary activities. Water awareness would be the recognition and appreciation of patterns, connections, distinctions, morphologies and grammars of water flows, water bodies, and water systems, as

well as water-nature relations and water-human relations. Water literacy would consist of the ability to analyze, decode, critique, and synthesize the multitude of material instances of water, the entanglements of waters and cultures, and the meanings that emerge from water-human relations. I will return to this analogy in chapter seven, where I will discuss how water awareness and literacy inform water reconstruction, and in turn how water reconstruction deepens water awareness and literacy.

Conclusion

Having discussed the particular challenges of water crises in the West, the conventional responses from the water sector, critical analysis of the water crises and responses from water scholars, and my own analysis from the perspective of ecotheology, the next task is to understand how water has come to be constructed as it has an abiotic, commensurable material substance that exists in its pure state far removed from humanity, in other words as dead, dumb, and disenchanted. Thus, the task ahead for water-focused ecotheology is to reimagine water. That is an enormous undertaking for water exists in many forms and at many scales. Further, water is engaged in so many facets of human culture, from the decorative fountain to the sanitary arrangements of modern cities to the production of electricity. Chapter two will address the historical processes that led to the reductive, dualistic constructions and will offers a framework for a fuller, non-dualistic construction of water, and explore essential elements of reimagine water. In doing so, I am showing how to make social constructions of water crises, water itself, and water-human relations visible and, moreover, decodable. What is significant here is to understand that the dominant construction of water as a homogenous, asocial material object by Euro-western culture is not inevitable but is the product of historical processes, and depends on dualism and anthropocentrism. Knowing how to decode water constructions, water itself, and water-human relations is an essential step in becoming water literate. If water-focused advocates

cannot decipher these elements they will not truly see and hear water, comprehend water-human entanglements, or understand the deeply encoded meaning water has to human communities.

Chapter Two: Decoding Circumscribed Water

As it nourishes both the imagination and the body, water is a strange, political, poetic material that is fundamental not only to the formation of human bodies but also to the ways in which we make meaning in the world.

— Nikhil Anand, *Hydraulic City*[1]

Introduction

In the previous chapter, I examined how the world's multiple water crises have been misunderstood as primarily about total available water supply diminishing, or a crisis of supply management, rather than recognizing that many of the water crises in world, and a majority of the crises in the West, are due to how water is used.[2] Water scholars contend that how we use water is shaped by what we think water is, and the most dominant social constructions of water have a very significant influence on water-use. Additionally, water scholars maintain that the dominant ways of understanding and representing water, and therefore water crises, are circumscribed and non-sustainable. Hence, water scholars have argued that it is important to analyze how historic processes have shaped how water has been socially constructed. Further, some water scholars have contended that for patterns of non-sustainable water-use to change in the West, water must be reconstructed as more than material, exogenous, and commensurable. In essence, they argue that our dominant ways of understanding and representing water are ill-suited for the contemporary necessity to conserve, preserve and restore waterscapes (inclusive of built water systems). In addition, the dominant understandings of water do not account for the

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[1]Nikhil Anand, *Hydraulic City*: *Water and the Infrastructures of Citizenship in Mumbai* (Chapel Hill: Duke University Press, 2017), 220.

[2] In this dissertation, I have chosen to use the term *culture* to signify both the (i) absolute sense, that is culture as the collectively produced and shared concepts, conventions, and commitments of a large human population and the (ii) descriptive sense, that is culture as a particular form that has or is occurring in a particular socio-temporal location. Several scholars in water studies use the term *society* to connote both a community of humans that has shared concepts, conventions, and commitments (analogous to sense (i) of *culture*) and also, more often as *societies*, which connotes particular instances of those collective communities (analogous to sense (ii) of *culture*).

many dimensions of water, water-use, water-products, and, most importantly, the meanings encoded in each that can drive water-human interactions. Therefore, they argue for reconstructing water, transforming binary and reductive ideas of water as dead, dumb, and disenchanted to understanding and representing water as having material, political, economic, social, ecological, and spiritual dimensions.

I contend that water-focused secular environmental movement organizations (*SEMO*s) and religious environmental movement organizations (REMOs) would make significant gains in fostering social change by reimagining water. To reimagine water, it is necessary first to grasp how it is that we conceive of water as asocial, homogenous, instrumental, which is a result of historical processes that took place during the nineteenth and twentieth centuries in the post-industrial West. Therefore, the first half of this chapter will offer a brief survey of the historical processes that led to how water came to be constructed as material, exogenous, and commensurable. Second, I discuss the consequences of the dominance of circumscribed water constructs, which are a utilitarian and profligate relation to water. Third, I will review the reconstructions of water and water-human relations offered by several water scholars, which offer a number of useful discernments and propositions. Fourth, I offer my own reconstructions informed by water awareness and literacy, which are a framework for organizing knowledge of water and water systems, as well as water-use, and counternarratives to circumscribed water constructs.

The second half of this chapter will examine how a community might go about reimagining water. To do so, I suggest two heuristic tools, which I had introduced in chapter one. The first is a model for how water is reimagined and the second is an organizational frame for distinguish knowledge of water, water itself, and water-human relations. As I stated in chapter

one, what is needed to change everyday practices is to reimagine water. Reimagining water is a dynamic process that has three elements: awareness, literacy, and reconstruction. I have modeled my understanding of the process of reimagining on Walter Brueggemann's prophetic imagination. Brueggemann explains that a prophet's role is to present to his/her community judgment, and hope. In the instance of water advocacy, the task of judgment consists of water awareness and water literacy, and the task of hope consists of reconstructing water and generating counternarratives. My model for reimagining water is a heuristic, meaning that it is a simplification of a much more complex and organic process. However, by having names for the elements of the process, water-focused ecotheologians and REMOs might better understand how the social constructions of water are related to everyday practices, and how water advocates might effect social transformation through reimagining water. My model of the process of reimaging water is influenced by social change theories. Toolkit theory and social practice theory each theorized that social change is not causally connected (driven by) attitudes and values. Instead, social practices are enabled and limited by mutually constructed systems of meaning or social constructs. I discuss these theories more in chapter three.

Historical Perspective of Changing Social Constructions of Water

In this section, I offer a historical sketch of the social constructions of what we understand water is and how its meanings have changed in the past 200 years. Shifts in constructs of water are responses to the tremendous upheaval of the western European societies, and its colonies and trading partners, that was brought about by the Industrial Revolution.[3] As this is a rapid review of many social forces interacting over several centuries, I will break the social world of western Europe into four categories that I call *spheres*: water in the domestic sphere, water in the

[3] Veronica Strang, *The Meaning of Water* (Oxford: Berg, 2006), 248.

economic sphere, water in the scientific sphere, and water in the sphere of law and governance. This is for the purpose making distinct the simultaneous streams of history in service to the larger goal of understanding the social construction of water, and it does not mean that the historical process at play in the Industrial Revolution were independent of one another. In discussing each sphere, I begin with a brief description of how water was experienced or understood in that sphere prior to the nineteenth and twentieth centuries. I begin by exploring how the domestic experience of water changed due to the urbanization and modernization of the Industrial Revolution. Next, I explore how water was experienced differently in the economic domain. Next, I discuss how the scientific exploration of the movement of water above, across, and below the surface of the earth, and the chemical composition of water transformed how water was understood and represented. Lastly, I explore how changing needs of landowners and industrialists, and later governments and corporations, reconfigured how water was understood and represented in the law and transformed how access to water was managed. Through this analysis, an understanding emerges of how water came to be constructed almost exclusively as a homogenous, asocial, material object.

It should be noted that this is a historical overview of how water as an idea has been socially constructed. This section is not intended to be a comprehensive history of: the development of domestic water services, how water was harnessed for trade or power generation, the scientific understanding of water and hydrology, or the evolution of water governance or law.[4] My goal is to give a sense of how the experience and understanding of water changed

[4] One highly comprehensive history of water as a political, economic, and social force is Steven Solomon's *Water: The Epic Struggle for Wealth, Power, and Civilization* (New York: HarperPerennial, 2011). However, Solomon gives little attention to the social construction of water. Regarding the history of water systems and the social forces

significantly due to the historical process of modernity, and that what we think water is and how we use water is social constructed in response to our past and the challenges of the present. I have therefore limited the scope to describing the historic shifts that occurred in cities in industrial western Europe, Canada, and the United States as these are most germane to the West's three water crises: pollution, unsustainable abstraction, and climate change. Until recently, there have been few histories written about bodies of water or waterworks.[5] Of these histories, a majority are written for the purpose of explaining human historical processes, how bodies of water or waterworks were harnessed or invented, and what the impact such developments had on human culture. In such explorations, little attention is paid to water itself nor is it usually acknowledged that water is socially constructed. Recently, a growing body of literature has emerged in several academic fields that examines the relation between water and human as its primary subject.[6] In addition, there is a limited but growing body of literature on that offer historical studies of the social constructions of water.[7] The material in this section depends on the older studies as well as the new, and is especially indebted to the work of

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that led to modern conventions on hygiene and sanitation, geographer Matthew Gandy has several texts, most notably *The Fabric of Space*, and Veronica Strang's *The Meaning of Water* gives a general understanding of what she terms "enclosures" of public water bodies, which offers a broad analysis of how private piped water altered constructs of water. For a more detailed history of the evolution of scientific understandings of water, excellent sources are chapters three to six in Jamie Linton's *What is Water?*, Christopher Hamlin's article "'Waters' or 'Water'?" and more generally, Tvedt's *Water and Society*. One of the best texts on how large dams came to be the centerpiece of built water-systems, and therefore to shape social constructions of modern water systems, is Marc Reiser's *Cadillac Desert.*

[5] This is a point noted by several authors, including Jamie Linton, *What is Water?: The History of a Modern Abstraction* (Vancouver: UBC Press, 2010), 75; Terje Tvedt, *Water and Society: Changing Perceptions of Societal and Historical Development* (London: Bloomsbury Publishing, 2015); Rila Mukherjee, "Escape from Terracentrism: Writing a Water History," *Indian Historical Review*, 41, 1 (2014): 87–101; and Benjamin Orlove and Steven C. Caton, "Water Sustainability: Anthropological Approaches and Prospects," *Annual Review of Anthropology* 39 (2010): 401–410.

[6] Liz Roberts and Katherine Phillips, eds., *Water, Creativity and Meaning* (London: Routledge, 2018); Matthew Gandy, *The Fabric of Space: Water, Modernity, and the Urban Imagination* (Cambridge, MA: MIT Press, 2014); and Jessica Barnes and Samer Alatout, "Water Worlds: Introduction to the Special Issue of Social Studies of Science," *Social Studies of Science*, 42, no. 4 (August 2012): 483–488.

[7] See Tvedt, *Water and Society* and Linton, *What is Water*?

Georgia Coustalin, Matthew Gandy, Jamie Linton, Donald Pisani, Anthony Scott, Veronica Strang, Leslie Tomory, and Terje Tvedt.[8]

Before proceeding, it is important to explain that the modernization of water supply and waste systems is best understood as having an uneven geographically and socially development.[9] Water infrastructure systems in cities transformed rapidly compared to comparable systems in suburban and rural spaces. In addition, due to their greater access to capital and political consensus, industrial nations with well-established, reliable governments developed modern water infrastructure systems more quickly and completely than did agricultural nations or colonial and post-colonial countries.[10]

THE DOMESTIC SPHERE—WATER DECOUPLED AND DEMATERIALIZED

Prior to the urbanization precipitated by the Industrial Revolution, the experience of water was markedly different than the postmodern one.[11] To give a sense of the degree to which the experience of water transformed, I will begin with a rough account of how water was structured and experienced. In rural areas, water was drawn daily from streams, springs, or communal wells in spare quantities as water is cumbersome to carry. In urban areas, water was fetched from a

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[8] For a more detailed history, excellent sources of how scientific innovations are Linton's chapters 3–6 in *What is Water?*, Christopher Hamlin, "'Waters' or 'Water'?—Master Narratives in Water History and Their Implications for Contemporary Water Policy," *Water Policy* 2, no. 4–5 (2000): 313–325, and more generally, Tvedt's *Water and Society*. Regarding the history of water systems and the social forces that led to modern conventions on hygiene and sanitation, Matthew Gandy has several texts, most notably *The Fabric of Space*, and Veronica Strang's *Meaning of Water* gives a general understanding of what she terms "enclosures" of public water bodies, which offers a broad analysis of how private piped water altered constructs of water. One of the best texts on how large dams came to be expected and to shape social constructions of water is Marc Reiser's *Cadillac Desert.*

[9] Gandy, *Fabric of Space,* 8–9.

[10] Broadly speaking, societies that had a larger degree of democratic governance and a focus on trade were better at innovating and implementing water supply systems, such as England and the United States. In contrast, societies with a larger degree of centralization, autocratic governance, and economies focused on agricultural products and mineral resources were better developers of sewer systems, such as in France and Austria. This is most likely due to how much more expensive, disruptive, and protracted sewer development is as sewer lines are larger and are usually dug more deeply underground.

[11] See Leslie Tomory, *The History of the London Water Industry: 1580–1820* (Baltimore: Johns Hopkins University Press, 2017*)*; Martin V. Melosi, *The Sanitary City: Environmental Services in Urban America from Colonial Times to the Present* (Pittsburgh, PA: University of Pittsburgh Press, 2008); and Cynthia Kosso and Anne Scott, *Nature and Function of Water, Baths, Bathing, and Hygiene from Antiquity through the Renaissance* (Leiden: Brill, 2009).

well, cistern, or communal fountain. Water carriers were often women, and in larger households, carrying water was the work of low-ranking servants, or in larger cities water carriers were a professional class.[12,13] Water supply systems and sewers existed in many premodern cities, although few households enjoyed direct connections to supply lines or private sewer lines.[14] In urban areas, bathing in a tub was the exception for all but the rich as water had to be heated and then carried to the tub.[15] In urban spaces, public latrines and privies were the norm, while in the countryside the spaces set aside for elimination were often outdoors and less formal.[16] As drawing water was daily task, village wells, city fountains, and communal water pumps were social spaces that were managed by implicit social codes and governed and maintained locally.[17] Well and cistern water was quite different from the "living water" that came from streams, rivers, and springs. Additionally, water often brings along with it soluble minerals and other compounds, which impart a variety of orders and smells.[18] Hence in the West prior to 1820, water was experienced as a part of kitchens and gardens, and as a daily necessity that did not appear unless it had been fetched. More broadly, water was experienced as visible, situated, carried, and communal. In addition, waters were not homogenous.

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[12] Strang, *Meaning of Water,* 23, 193.
[13] Water carriers still exist in cities around the globe, though their work is considerably easier with the advent of motor vehicles.
[14] Even in Imperial Rome, direct connections to water services were only available to the richest and most influential households. See Tomory, *History of the London Water Industry*, 20–21, and Ivan Illich, *H_2O and the Waters of Forgetfulness* (Dallas: Dallas Institute of Humanities and Culture), 36–39.
[15] Public baths flourished during the Roman Empire, and some cities in Europe still had a thriving bath culture. However, by the Renaissance, in many European countries, public baths became associated with prostitution. See Kosso and Scott, *Nature and Function of Water.*
[16] The expectation of privacy is a modern development both for elimination and bathing.
[17] Nandita Singh, "The Changing Role of Women in Water Management: Myths and Realities," *Wagadu: A Journal of Transnational Women's & Gender Studies*, 3 (Spring 2006), 94–113.
[18] While the untreated water supply could lead to illness, it is a myth that pre-modern populations did not drink water. Other beverages, such as small ale and wine, may have been preferred but many sources attest to the fact that water was consumed.

As the Industrial Revolution advanced, rural populations migrated to urban centers, which meant becoming disconnected from familiar waterscapes and freshwater sources.[19] Urbanization led to another disconnection of water—water was increasingly experienced as drawn from built water systems, that is piped rather than in springs or rivers, which was process of dematerialization and deracination.[20] Additionally, as a result of widespread urbanization, the experience of domestic water changed significantly.[21] The over-subscribed freshwater supplies of burgeoning cities, along with innovations such as steam-powered water pressurization, led to the formation of private water services, which in turn made citywide indoor plumbing for kitchens and bathrooms possible.[22] As cities developed water supply systems from 1810 to 1850, the upper and middle classes began to experience piped water as the dominant way in which they encountered water, rather than water being carried to the household from a well or stream. Further, direct water service led to a decoupling of individual households from the water "commons" and shifted allegiances from the local, common water supply to private, and later municipal, water infrastructure networks. As homes were connected to municipal systems, a dramatic shift in meaning occurred.[23] Additionally, water for domestic needs became a service that was paid for rather than a household essential that was procured through labor and management, which shifted the relationship to water from reinforcing autonomy to one of

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[19] Strang, *Meaning of Water*, 246.
[20] Raymond Williams makes an interesting point that the industrial and merchant elites were able to re-connect with nature whereas the urban working classes and the urban poor became the most physically disconnected from nature by virtue of not being able to escape urban spaces: "As the exploitation of nature continued, on a vast scale, and especially in the new extractive and processes, the people who drew most profit from it went back where they could find it (and they were very ingenious) to an unspoilt nature, to the purchased estates and the country retreats." Raymond Williams, "Ideas of Nature" in *Problems in Materialism and Culture* (London: Verso, 1980), 81.
[21] Gandy, *Fabric of Space*, 12–14.
[22] Previously most water supply systems were gravity fed, which limited the length of service lines and delivery to upper stories of buildings. New water works were made possible by the steam engine, which could draw and pump water from greater depths and move water over greater distances than gravity fed systems.
[23] Strang, *Meaning of Water,* 21–27 and Gandy, *Fabric of Space*, 11–12.

disconnection and deracination. By the 1870s, piped water and indoor bathrooms were had come to be common in upper- and middle-class homes. For the working classes and the poor, the experience of domestic water remained unchanged in most countries until the 1920s.[24] Rather than water entering home and outbuildings visibly and laboriously in buckets, piped water arrived invisibly into a house from the water supply system.[25] Water scholars Ivan Illich and Matthew Gandy argue that as homes gained direction connections water services, not only was the architecture of the building transformed but attitudes towards the body, modesty, and personal privacy were altered.[26] Sources of water were increasingly obscured from view, and experienced as dematerialized and deracinated. Due to the crowded conditions in urban spaces, the experience of water in yet another way. As cities filled in the first half of the nineteenth century, sanitary conditions in most cities deteriorated as traditional waste-water systems broke down. Prior to 1875, few cities had underground sewer systems. Cities that did have a sewer system, like Rome and London, found that the increased waste generated by the influx of new residents exceeded the capacity of their premodern sewers. Illich explains that the sensory experience of urban cities was transformed by the development of underground sewers because storm water and blackwater were drained almost imperceptibly from urban spaces.[27] Between 1830 and 1870, responses to the worsening sanitary conditions led to building of modern municipal sewer systems and establishing of sanitation departments.[28] By the turn of the century, a centralized urban water system came to be defining of whether a city was "modern."

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[24] Illich, *H_2O and the Waters of Forgetfulness*, 72.
[25] Strang, *Meaning of Water* 197.
[26] Illich, *H_2O and the Waters of Forgetfulness*, 57–64 and Gandy, *Fabric of Space,* 43–47.
[27] Illich, *H_2O and the Waters of Forgetfulness*, 39.
[28] Matthew Gandy, "Rethinking Urban Metabolism: Water, Space and the Modern City," *City* 8, no. 3 (December 2004): 365–67.

In the twentieth century, domestic experiences of water continued to change as people living in less densely populated regions began to expect water services similar to those found in cities. Steam-powered pumps led to financially feasible increases in water infrastructure. Cheap electrical power and lower transportation costs changed the ability of rural communities to build out water systems. Hence, within the course of one hundred years, the experience of domestic water changed for many people both in the dislocation from water *in situ* and in the modified perception of piped water as invisible/inconspicuous and homogeneous. The introduction of modern water services to the domestic sphere radically changed how people experienced water.[29] Water was no longer cumbersome, limited, communal, heterogeneous, and, in many regions, seasonally varied. The experience of water transformed from being visible, situated, and relational to inconspicuous, deracinated, individual, and dematerialized. As a result, the meaning of water shifted from being a source of sustenance, social connectional, and intrinsic value to being a proxy for social affiliation, status, and wealth.[30] Additionally, the significance of water was divided between water bodies and built water systems, which were encoded with separate meanings. Water bodies were thought of as aesthetically and wholesomely valuable though not necessary whereas built water systems were instrumentally necessary deemed to be mundane.

THE ECONOMIC SPHERE—WATER SHIFTS FROM SINE QUA NON TO COG IN THE MACHINE

The role that water played in the economic life of premodern communities was highly visible. Farming depended on rains and in more arid regions, on irrigation practices. Additionally, several industries such as tanning, wool cloth making, and—in the late Middle Ages—paper making, depended on ready supplies of water, and were typically cited in the downstream flows

[29] Gandy, "Rethinking Urban Metabolism," 366.
[30] Strang, "Common Senses: Water, Sensory Experience and the Generation of Meaning," *Journal of Material Culture* 10, no. 1 (2005): 92–120, 114.

of urban spaces. Water occupied a central place in the mining and metal working industries.[31] Water was also well understood as a transporter of people and goods, down rivers and across narrow seas. As had happened in the domestic sphere, the experience of water in the economic sphere transformed, which in turn shifted social constructions of water. When a majority of a population was rural, water's centrality was immediate. However, the widespread building of canals, water mills and the invention of steam powered engines, commerce and industry exploded and reshaped markets and workplaces, which simultaneous made power generation and the production of economic goods inconspicuous.[32] Waterborne transportation was key to the Industrial Revolution as transporting goods to markets was much cheaper over water than over land.[33] The easily navigable rivers and man-made canals of western Europe and Britain are an under-acknowledged but crucial factor in the rapid economic development of the eighteenth century.[34] Indeed, economic historian R.M. Hartwell has argued that waterways were so significant to industrialization that "the map of English canals is the map of industrial England."[35] The pivotal significance of waterways to the economic development of New England is equally true. An additional critical factor in the region's explosion of production and commerce were advances in harnessing the river currents for large-scale power generation for textile production. Textile mills were first powered by water wheels and later by steam engines. Unlike wind-generated power, power generated by water wheels could provide consistent,

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[31] Adam Robert Lucas, "Survey of the Evidence for an Industrial Revolution in Medieval Europe," *Technology and Culture*, v46, no. 1 (January 2005), 1–30.
[32] Before fossil fuels, prior to steam power, the production of mechanical power to lift, turn, pump, pull, or carry was mainly produced by wind and water power (sails, windmills, water mills) or by draft animal.
[33] Tvedt, *Water and Society*, 25.
[34] Tvedt, *Water and Society*, 31–32.
[35] Ronald Max Hartwell, *The Causes of the Industrial Revolution in England (*London: Methuen, 1967), quoted in Tvedt, *Water and Society*, 25.

reliable mechanical power year-round.[36] Sites for water wheels were chosen for their steady, moderate, year-round current with little fluctuation in water level like the rivers of England and New England.[37] Well into the twentieth century, textile mills remained alongside rivers because water continued to be essential to their steam-powered looms and to their transportation of finished goods to market.[38] However, railroads and later truck transportation uncoupled the links between industrial mills and waterways. Indeed, as transportation became more diversified, water became dematerialized as part of manufactured or agricultural goods, despite remaining an essential component of all production and farming processes. Perhaps because a small fraction of populations in the post-industrial West have any experience of the industrial processes that produce food and market goods, a re-education process has become necessary for communities to understand that many crops require lavish watering. Advent of direct domestic connection was an economic boon for the proto-water industry, but had several repercussions to how water was experienced, and therefore conceptualized.[39] Water is still an essential part of the economic life of industrialized and post-industrialized nations but it is largely invisible and dematerialized. Large-scale farming (dairy farming, coffee, cotton), industrial processes such as fabrication of microchips and electronics, and energy production are sectors that depend on the application of

[36] Water wheels have been used since the first century BCE in many regions, notably by the Cistercian order in the middle ages. However, their use was limited by the characteristics of the river on which they were located, such as seasonal flow, volume, and turbidity.
[37] Terje Tvedt, "Why England and Not China and India? Water Systems and the History of the Industrial Revolution" *Journal of Global History* 5 (2010): 29–50.
[38] Grist mills, lumber mills, stamping mills, paper mills, textile mills, and blast furnaces were among the most common uses of water power prior to the invention of the standing steam engine in the mid-eighteenth century.
[39] The development of the early water industry (pre-1914 CE) should be characterized as pan-European and North American, although its roots have clear contributions from the near East and Africa, such as bridge mills in Moorish Spain and the vertical axis water wheel of the Turkish Empire. Additionally, it should be noted that early development of water supply systems and the integration of power generation by water, and later steam, into large-scale production of commodities, occurred in countries with less centralized governments, such as the Netherlands, Britain, and New England. Later developments, such as building large, capital intense and geographically disruptive infrastructure like sanitary sewers and large-scale irrigation districts, depended on centralized governments such as in France, Austria, and the United States federal government to building.

freshwater, yet their products are not understood as produced using water. Strang addresses this when she writes: "The meanings of water flow through all the activities of these industries. Although most no longer use water wheels, water is still a major 'driver' of their production of wealth and their ability to act upon the world."[40]

The experience of water as part of economic processes transformed from being visible, by which I mean explicit, tangible, and linked to products to inconspicuous, by which I mean dematerialized, hidden, obscured, or implicit, or even subsumed—other thing becomes a proxy for it. As a result, the meaning of water shifted from being a source of crops, market goods, and community prosperity to being a proxy for social affiliation, status, and wealth.[41] Additionally, the connections between water flows and the trappings of post-industrial Euro-western culture, such as clothing and cell phones, has been broken.[42] There is little understanding of how much of everyday economic life is built on a foundation of reliable, inexpensive water supplies for agricultural and industrial processes.

THE OWNERSHIP AND MANAGEMENT SPHERE—THE ENCLOSURE OF WATER

In the third sphere, the structures of how water flows and infrastructure systems were managed within communities shifted considerably during the ninetieth and twentieth centuries, which in turn transformed meanings. Prior to the modern era, the ownership of a river's flow was dominated by the landowning elite, which often included the monarch and the church. Thus, landowners monopolized fishing rights, rights of way, and riparian rights.[43] Yet, management of

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[40] Strang, *Meaning of Water*, 167.
[41] Strang, *Meaning of Water,* 125.
[42] Joachim Blatter and Helen Ingram, eds., *Reflections on Water: New Approaches to Transboundary Conflicts and Cooperation* (Cambridge, MA: MIT Press, 2001), 43.
[43] For example, a land-owner might allow construction of docks or a water mill along a river's banks and typically would demand a portion of the income generated. Landowners could also demand a toll for use of waterways and bridges over the river. These practices are based in Roman law and other local practices, which understood the riverbed and banks as property, and the benefit of the flow was allocated to the property's owner.

freshwater supplies and access to was organized at the local level and therefore much more districted and democratic. In the ancient and medieval West, a majority of the population lived on farms or in villages, and the management of their water supply was directly and collaborative.[44] In cities or on large estates and monasteries, water supply and related water structures such as weirs, water meadows and watermills were managed by more specialized wardens, bailiffs, and millers but oversight was still highly visible and directed towards the needs of the local community. What is notable about the management of premodern water is that it was visible, situated, collective in character and intelligible. Hence, for premodern communities, the management of water was encoded with a sense of place, community, interdependency, agency, and autonomy.

As has been described in the section above, the rapid urbanization of industrial cities in the late 1700s generated a soaring demand for increased water supply, and private supply companies emerged in response. In cities, these water companies built reservoirs and service lines, and applied emerging technologies to increase water pressure and transporting water. While building such infrastructure was capital intense, it quickly could expand a water company's service area and ability to compete in a crowded water marketplace. As homes were connected to the service lines of these water companies, the daily management of water shifted to the less direct and less visible control of the private water companies.[45] Control of water by private entities increased rapidly, and in times of soaring demand, the reduced access and control over supply was acute.[46] By the first quarter of the nineteenth century and even more acutely by

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[44] Strang, *Meaning of Water*, 21–22.
[45] Strang, *Meaning of Water*, 39, 246.
[46] Yrjö Haila, "Securing Water: Ambiguities of Control versus Coexistence," in *Water in Social Imagination: From Technological Optimism to Contemporary Environmentalism,* eds. Jane Costlow, Yrjö Haila and Arja Rosenholm (Leiden: Brill, 2017), 263.

the mid-1800s, the booming urbanism combine with a lack of modern sewer systems unfortunately led to devastating epidemics, such as typhoid, cholera, and tuberculosis. However, rather than private companies, municipal authorities rapidly built modern sewer systems.[47] Over the course of three decades, scientific discoveries connected disease with inadequate sewer systems and poor sanitation. Coupled with the emergence in the 1860s and 1870s of nationalism and the wealth generated by the Second Industrial Revolution, municipal governments acquired tremendous centralized power by initiating construction of city-wide sewer systems, and later freshwater sanitation systems.[48] It is not hyperbole to state that cities were radically transformed by building sewer systems. Additionally, as cities outstripped their existing water supplies, larger cities took over existing private water companies and consolidated more power, using the justification of centralization and increased regulation. However, as governments took over control and management of water flows into and out of urban spaces, the outcome of centralization was a decrease in direct management and local oversight. Veronica Strang characterizes this as a de facto enclosure of water supplies by the governing elite, and notes that such enclosures were more common among marginalized communities.[49]

Management of water became professionalized. What evolved from the sanitary movement was a different model of authority and management of water systems—centralized and arcane. Strang writes:

> Water abstraction, treatment and disposal became more sophisticated, incorporating a series of chemical and hydrological processes. Water was increasingly analyzed, evaluated, measured and metered. Requiring technical skills or scientific

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[47] The Second Industrial Revolution is generally dated as beginning in 1870 and ending with the First World War in 1914. It occurred primarily in western Europe, notably German and Great Britain, as well as Canada, the United States, and Japan.
[48] Kirsten Hastrup, "Water and the Configuration of Social Worlds: An Anthropological Perspective," *Journal of Water Resource and Protection* 5, no. 4 (2013): 62. doi:10.4236/jwarp.2013.54a009.
[49] Strang, *Gardening the World: Agency, Identity and the Ownership of Water* (Oxford: Berg Books, 2009), 279.

> knowledge, this professionalized the industry, passing the control of water up an ever more select and largely male hierarchy of engineers, biologists, bacteriologists and chemists, with expertise well beyond the everyday knowledge of water users. This created – among the agencies of the state and industry – a powerful and exclusive epistemic community based on 'expert' knowledges inaccessible to the majority of people.[50]

Perhaps the diminished control over water supplies become acceptable as modern communities better understood the connection between water, pathogens and epidemics. The last quarter of the twentieth century saw a shift away from the water governance by the state through major water projects and regional monopolies (the state-hydronic mode) to a market-driven, conservation oriented (demand management) governance. [51] Transformations in water governance and in its treatment as a legal entity further disconnected and dematerialized experiences of water and established the idea of water as a commodity and private good. As elites owned water and knowledge became more technological and arcane, common people were disenfranchised. Management shifted from local and social to professionalized and enacted without reference to local social inflections.

The experience of water as part of ownership, management or control of water transformed from being visible, by which I mean explicit, local, and comprehensible to that of being inconspicuous or incognizant and arcane. As a result, the control and management of water shifted from being a source of local autonomy to becoming highly contested and professionalized, which further intensified the disconnection and deracination of the common person from the flows of local waterways and from freshwater supplies. Water law has become so specialized, as is municipal or regional water management, that citizens feel voiceless and powerless.

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[50] Strang, *Meaning of Water*, 40.
[51] Jamie Linton, *What is Water?,* 47–48.

THE SCIENTIFIC SPHERE—FROM ENCHANTED ENTITY TO ABSTRACT MATERIAL

In addition to the transformations in how water was experienced in the domestic and economic spheres, developments in scientific inquiry changed how people understood and represented water. In the ancient and medieval periods, water was epistemologically understood to be elemental, material, heterogeneous, relational, and enlivened by spirits. Writing on the idea of water in the ancient occidental world, Linton explains that premodern waters, such as springs rivers, lakes, and artisanal springs, were thought of as distinct from one another not just geographically but in terms of their character and cultural relevance. Flows of water manifest unique qualities that pre-modern thinkers believed were due to their far-off origins, and sometimes due to qualities imbued by demi-gods associated with their flows. Any water drawn from a spring, stream, or river will have unique qualities, even if it has been conveyed by an aqueduct. Many scholars have demonstrated that, prior to the Early-Modern Period, common ways of thinking about water were diverse as well as sophisticated.[52] Water was also understood as heterogeneous in form and quality depending on its source, such as wells, springs, rivers, and seas. Because they had differing origins, these various waters were not thought of as ontologically identical."[53] Rather, premodern writers understood them to be divergent, much as we might say that oak and cypress trees are each trees but are markedly different species. Sources such as Vitruvius, Pliny the Elder, and Frontinus describe rivers, streams, well, and springs as having heterogeneous qualities that gave them distinctness and uniqueness. In addition, premodern cultures did not conceive of water as an inert, lifeless substance but as personifications of divine spirits. In antiquity, bodies of water were sometimes seen as divine or

[52] Hamlin, "'Waters' or "Water'," 313–325; Gandy, "Rethinking Urban Metabolism," 363–79; and Linton, *What is Water?*, 73–103.
[53] Hamlin, "'Waters' or "Water'?": 313–325, 315.

semi-divine beings. In other instances, water deities were thought to be embodied in rivers, streams, or springs, or as presiding over fountains, wells, or pools. Due to the connection with divine beings, such waters were thought to impart blessings or healing and could be considered sacred.[54,55] Even the process of Christianization did not disenchant water. As ecotheologian Sean McDonagh explains: "The arrival of Christianity in the fifth century did not lead to the abandonment of holy wells. In fact, they were 'Christianized' and often associated with a local saint."[56] Most notably, premodern authors understood and represented water as a lively and diverse organic entity, able to embody or represent the sacred, as opposed to a mechanical, inert substance.

The Scientific Revolution ushered in new ways of understanding the nature of reality, which in turn led to a shift in how nature and water were socially constructed.57 There are three key moments in the nineteenth century epistemological history of water: the identification of water as a compound, the adoption germ theory, and the adoption of Horton's hydrological cycle. The scientific pursuit to identify water as a chemical and physical substance largely ignored all social meanings of water. In the second half of the nineteenth century, water's role as a vector of disease became quantified. However, while the spread of disease is a social process, scientists and sanitary movement advocates began to define water as a conduit, and water

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[54] Linton, *What is Water?*, 89.
[55] Ecotheologian Sean McDonagh writes that in Celtic lands in central and western Europe, rivers often were associated with goddesses, and their headwaters frequently boasted religious structures dedicated to veneration practices. McDonagh notes that many rivers still bear the name of the Celtic goddesses associated with them, such as the Seine, the Shannon, and the Marne. See Sean McDonagh, *Dying for Water* (Dublin: Veritas Publications, 2003), 99.
[56] Sean McDonagh, *Dying for Water*, 99.
[57] By Scientific Revolution, I refer to the historic period after the Reformation and before the Enlightenment when scientific investigation using methods of direct observation and quantitative measurements. The Scientific Revolution can loosely be dated as between the mid sixteenth century and the end of the seventeenth. I date it as between 1543 and 1687 CE, or as occurring between the publication of Copernicus's *On the Revolutions of the Heavenly Spheres* (1543) and Isaac Newton's *Principa* (1687).

systems were encoded as carriers of diseases. In the course of less than one hundred years, constructions of water shifted from a plurality of varied, lively, situated substances, to a homogeneous, known material substance. Due to social forces in the Early Modern period, epistemologies of water transformed from being visible, subject, elemental, and heterogenous to an inconspicuous, quantifiable, homogenous compound. Due to the outsized influence of scientific knowledge, water was constructed almost exclusively as an object of enquiry, that is a thing to be measured, classified, and accounted for empirically, which was defined as inert, abiotic. The social construction of water as an inert, abiotic object, which in turn made other ways of knowing water less available and led to other reifications of water, such as natural resource and economic good.

MATERIALITY

Scholars have demonstrated that water has been reduced to its material qualities, which led to the social construction of "natural resource," and "water infrastructure systems."[58] Characteristics of water most emphasized are its potability, quantity, its usefulness and its economic value. The non-material aspects of water are overlooked or ignored. We often take the material meanings of these as innate rather than constructed, especially when discourses are directed toward bodies of water or unmodified water systems, and therefore we do not contest them. However, dominant constructions of water depend on dualism, anthropocentrism.

Consequences of the Hegemony of Dominant Constructions

In this section, I discuss the consequences of the homogeneity of dominant water constructs. Let me first unpack the implications of the dominate construct, which I have stated is: homogenous, asocial, material object. When water is understood as being a homogenous chemical compound, it is understood to be commensurable and interchangeable. Rather than have qualities and

[58] See Ingram and Blatter, *Reflections on Water*; Strang, *Gardening the World*.

meanings particular to its temporospatial location, it is reduced to be what James Joyce once described as: "two constituent parts of hydrogen with one constituent part of oxygen."[59] When water is understood as asocial, it is understood to be exogenous of human societies. Such a construal not only privileges societies over water but also discounts how foundational bodies and flows of water have always been to any human settlement. Indeed, a construction of water as asocial disregards that all modern, industrial societies are as they are only because of the ability to harness water flows, and therefore all societies are made and remade by water. When water is understood as a material object, it is understood to be inanimate matter lacking agency and purpose. A material object is not sentient, nor does it have individuality. In contrast, human beings are living, knowing, beings with agency and purpose. By construing water as a material object, we imagine it as dead, dumb, and disenchanted, without individuality or intrinsic value. It is these circumscribed ways of understanding and representing water that lead to a utilitarian and profligate relation to water. For how we understand water shapes how we engage with water.

As I have stated, a persistent problem of Euro-western culture is that we are water blind and water illiterate. Even when we look at waterscapes, we do not see water the water that is in front of us. Instead, we see the water that we think with. In other words, when we look upon water, to us it becomes the well-trod constructs of the West's industrialized-scientific culture: a natural resource; a decorative feature of a park, garden, or building; or an economic asset. Human cognitive processes automatically use socially constructed mental units to think quickly and efficiently, which I will discuss more in chapters five and six. This is why it is important for REMOs and ecotheologians, among others, to grasp that the water that we think with is not water—because it is so automatic to think with our dominant constructs that only a conscious,

[59] James Joyce, *Ulysses, The Corrected Text*, ed. Hans Walter Gabler (New York: Vintage Books, 1986), 549.

collective effort can reconstruct them. Moreover, it is even more important to understand that the water that we think with is not water when shifting to discourses on what I term *watered* processes and products. I use watered in the sense of a process where water is employed, yet water has become obscured within the process, such as hydroelectric power production. Similarly, I use watered product in the sense of a product that was made using water but in a post-industrial culture there is a tenuous connection to that water, such as microchips, meat, and highly processed cotton clothing. In the case of both watered processes and products, their meanings have been disconnected from water because of how we have made water mean a homogenous, deracinated, material object.

The social construction of water as homogenous, asocial, material object is largely unaccounted for or misunderstood by water management experts and those who develop water policies at the local and international levels.[60] Moreover, this illiteracy is a major impediment to improving water policy, water management, and water activism. Hans Peter Hahn and Karlheinz Cless write: "Without consciousness of the interface between consumption and culture, between needs and beliefs, many technical solutions, measures, and activities can be void and ineffective because they were planned without considering the complexity of water. The value of water is not just a question of its price, but rests on appreciation, which itself is derived and originates from culturally rooted experiences."[61] Hence, it is important to comprehend and be able to decode the dominant constructions of water and water systems, as well as in watered processes and the watered products that Euro-western industries produce. The de-coupled relations between water and watered products such as microchip-based devices and electric cars has every

[60] Karen Bakker, "Water: Political, Biopolitical, Material," *Social Studies of Science* 42, no. 4 (2012): 616–17 and Strang, *Meaning of Water*, 2–3.
[61] Karlheinz Cless and Hans Peter Hahn, "Introduction," *People at the Well*, 21.

increasing repercussions, and therefore it is important to understand the relation between the water that we think with and how we use/consume water in agricultural and industrial processes. Closer to home, the process of watering one's garden and lawn has cultural significance besides what the gardener pays for the water. The connections between water practices in the home and garden, and at the table, need attention from REMOs and the larger field of ecotheology.

NATURE VERSUS CULTURE

Circumscribed water constructs confine the ways of thinking about ecological responses to shortages and pollution crises. Flows of water are defined as being a natural resource, and thus a property or good to be used by human societies for transportation, irrigation, drinking water, and power generation. Bodies of water is defined as wild, pure, and sublime, and therefore disconnected and subordinate in economic and social value to cities, in particular prosperous, post-industrial cities. Hence, consumptive water use is not challenged because it is *sine qua non* for prosperity and human well-being. A social constructions of water as natural may seem to value water and nature as intrinsically good and demanding protection or conservation, which I will discuss more in chapter five when I consider the social construction of nature. However, at the end of the day, social constructions of water as natural are contingent on a social construction of water as an object external to human culture and on utilitarian ethics. Divorcing water from culture, through social constructions that reify water as a material or asocial object, has far reaching consequences. It allows rivers and wetlands to be dismissed as instrumentally yet not intrinsically important natural resource and to the deracinated water utility industry, where electricity is not understood to depend on flows of water.

Furthermore, as noted in chapter one, water scholars are critical of pervasive acceptance within the water sector of ideas of water-demand and water use/consumption. The assumptions that water-demand is a logical outcome of economic processes that benefit societies or that

natural resources are wasted if they are not used to produce economic goods are premised on social constructions of water as homogenous, asocial material object. A lack of distinction between water, water use, and watered processes/products has a consequence of overlooking the connections between the water bodies and water-intense crops or consumer goods. Likewise, a lack of distinction can lead to misunderstanding meanings encoded in watered products, such as bottled water or the verdant greens of golf courses in arid or semi-arid climates.

However, it should be noted that water scholars do not state that constructing water in terms of its chemical formula or its universality is wholly unacceptable. Within a field of study, to understand water in narrow terms is appropriate. What is inappropriate is the widespread adoption of chemical or hydrological constructions as the general way of conceptualizing water. Having discussed the consequences of circumscribed constructions of water, I now turn to a brief review of proposed approaches to water crises by water studies.

Theorizing Waters—Insights from Water Scholarship

Having examined the water that we think with, let us now turn to a discussion of alternative ways of comprehending and representing water. In chapter one, I introduced the proposition that the water that we think with is not water but a social construction of water. This social construction of water is one among many within Euro-western culture but it is so dominate that it leaves little room for other ways to understand and represent water and water systems.[62] In the this section, I discuss the findings of water scholars, which looks behind the dominant constructs of water to investigated the nature of water itself. In inquiring about what water actually is, water scholars have productively theorized water and water-human relations. They have found that water has social, political, economic, symbolic, ideational, and spiritual aspects as well as material ones.

[62] Roberts and Phillips, *Water, Creativity and Meaning,* 6.

Many water scholars have sought to make water coherent by organizing water into. Others have redefined water as a new kind of hybrid. Still others have examined the meaning of water and how those meanings are encoded into personal and community identities, water management, language and epistemologies, and watered processes/products. Each has been worthwhile contribution. Below, I will examine the approaches most germane and useful for water-focused ecotheology.

WE MISUNDERSTAND WHAT WATER IS —WATER'S MULTIPLE ONTOLOGIES

Water scholars have investigated the broad array of writing on water issues to better understand how water is conceptualized and represented. They have observed that water is understood principally in material and objective terms.[63] The materiality of water is unquestionable and well-studied and reported. Water occurs in a wide variety of energy states, and is continually transforming, changing phases from gas to liquid or solid and then shifting again. Water is ever-changing. Many bodies of water are perceived as steadfast and fixed, yet this is a limitation of human perception rather than an accurate understanding of water. Indeed, water rarely stays still. Strang perhaps best articulates this when she writes: "The most constant quality of water is that it is not constant but is characterized by transmutability and sensitivity to changes in the environment."[64] Hence, as a material entity, water must be properly represented as multiform, relational, and ever-changing, as opposed to static, isomorphic, and homogeneous.

Norwegian historian and geographer Terje Tvedt has written extensively on water. Tvedt overarching project has been to better understand how water and water systems shape human lives and larger social forms, such as political and economic systems. As a result, Tvedt has

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[63] Joachim Blatter, Helen Ingram, and Suzanne Lorton Levesque, "Expanding Perspectives on Transboundary Water," in *Reflections on Water: New Approaches to Transboundary Conflicts and Cooperation*, eds. Joachim Blatter, Joachim, and Helen Ingram (Cambridge, MA: MIT Press, 2001), 35; and Linton, *What Is Water*, 13, 73–74.
[64] Strang, *Meaning of Water*, 49.

argued that there is a need for a systematics of water, which he calls a *water-system approach*.[65] Tvedt's primary goal in developing his water-system approach is to provide the fields of history, geography, anthropology, and political science with a new systematic method for analyzing and evaluating water's role in human history and water's role in the creation of cultural spaces. Tvedt proposes that his readers conceptualize the idea of water as signifying.

Tvedt's framework divides the idea of water into three distinct but interconnected senses, which he terms *layers.*[66] Thus, water is (1) a material element with a particular temporospatial location that is simultaneously independent of culture yet is continually shaping and being shaped by culture; (2) a socially appropriated and modified flows of water that shape and are shaped by culture in a continuous cycle, and (3) conceptualizations about water and the meanings ascribed to water and water systems by cultures. Tvedt's term *layer* is meant both in the archeological sense of human settlements having physical, historical strata that may be excavated and in the hydrological and environmental sciences sense of water bodies, such as lakes and oceans, having discernible strata that distinguishable by their temperature, turbidity, and biota. In each sense, the strata are real in that they signify actual differences in water but Tvedt acknowledges that such differences are, ultimately heuristic devices. Tvedt describes the first layer of water as representing all forms and behaviors of water in their natural state, characterized by physical, chemical, and biological attributes. First-layer waters are waters that exist in reality, waters that are continually on the move. As a material entity, first-layer waters

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[65]Terje Tvedt and Terje Oestigaard, "A History of the Ideas of Water: Deconstructing Nature and Constructing Society," in Terje Tvedt and Terje Oestigaard, eds., *Ideas of Water From Ancient Societies to the Modern World*, Series II, vol. I (London: IB Tauris), 2010 and Terje Tvedt and Terje Oestigaard, "Introduction: Urban Water Systems—A Conceptual Framework," in Terje Tvedt and Terje Oestigaard, eds., *Water and Urbanization*, A History of Water, Series III, vol. I (London: IB Tauris), 2014. Tvedt originally referred to his water-system approach as a *conceptual framework*.

[66] Tvedt, *Water and Society*, 5–18.

always have and always will shape geologic features, plant, animals, and human populations, and as such first-layer waters show agency. Tvedt's second layer represents water that has been modified by humanity by being captured, treated, or put to use for irrigation, power generation, industry, recreation, or ornamentation. Tvedt defines modifications to water as "the anthropogenic changes in the way water flows through the landscape."[67] For millennia, human communities have modified water and integrated these modifications into their cultures so deeply that modified waters have been the culture. In his description, Tvedt clarifies the interdependent nature of water and culture. Culture shapes water and is in turn shaped by modified water, and this synthesized process unfolds without end. The endless cycle of material abstraction and modification of water and its reciprocal effect on culture is a dialectic cycle: humans modify water to their own cultural ends but are also inescapably shaped and altered by culture. However, Tvedt does not ultimately overcome the dualism and anthropocentrism of conventional water constructs to the extent that he states. His bifurcation of second-layer waters into material and modified flows still disconnects the flows of water situated in water bodies, for example lakes, from the flows of water moving through built water systems because he is still imaging water as a binary of either "natural" spaces or brought into culture, rather than understanding water as a continuous flow that sometimes is situated within boundaries not-make-by-human-artifice and sometimes situated within human-made-containers, such a pipes, water mains, reservoirs, and harbors.

Tvedt's third layer of water represents the idea of water that vary over time and cultures, which are socially constructed. Tvedt's third layer includes ideas of water that arise from engagements with the first and second layers, and ideas of water that have developed a vast

[67] Tvedt, *Water and Society*, 8.

range of meanings over centuries. In contrast to the first layer, the third layer of water represents the many secondary and tertiary meanings ascribed to water by human culture, such as purity, fertility, disorder, mutability, and puissance. Third-layer waters include cultural, institutional, and scientific constructs of water as well as "habits of thought" about ownership, control, and management of water.[68] Tvedt uses the example of holy water—material water that is chemically indistinguishable from tap water—as water that has been modified by being blessed and becomes a powerful symbol of baptism, healing, and redemption. Tvedt writes: "The ways in which the water worlds or waterscapes are used practically, interpreted symbolically, and ascribed values according to local and regional transitions and norms have to be analyzed as a result of the continuous and long-term anthropogenic interactions and mediations of cultural and natural variables in the society-water systems."[69] It is the constructed waters of Tvedt's third layer that have been overlooked by water professionals and policy makers, and are especially important for water-focused REMOs to understand and reconstruct. Meanings such as water is life, water is a social good, water is a private right or transferable property, water is holy, and water is power are often at odds with one another. As we shall see below, a framework with which to understand and discuss the myriad meanings of water and their distinction from the first layer or the second layer of water is useful for addressing the growing global water crises. Cultural, institutional, and conceptual meanings of water are extensive, and they shape and constrain how water is used, conserved, and managed.

Tvedt's water systematics is useful to distinguish between the many forms and senses to which we refer when we speak of water. Tvedt's work may also be useful for crafting language

[68] Tvedt and Oestergaard, "Urban Water Systems," 14.
[69] Tvedt and Oestergaard, "Urban Water Systems," 13.

with which we may distinguish between various socially constructed waters, and thus more productively tackle water discourses. Tvedt addresses the artificiality of designating water as either natural or cultural and the underlying assumption that nature and culture must be constructed as "whole" rather than aggregates. Tvedt challenges his readers to think of water as both nature and culture at the same time. Tvedt's systematics may serve as a strategy for better understanding water as material, bio-cultural, and conceptual. However, Tvedt's purpose in developing a systematic of water is to provide the fields of history and geography with a conceptual tool for comparative analysis of cultures engagements with water, and his water-system is formulated with an emphasis on how water moves above, across, along, and under landscapes. As such, he does not drill down to the more detailed level of everyday water practices of communities nor tackle how the human communities appropriate of water flows into built water systems yield products, and how the water used to produce those products is sometimes explicit and sometimes virtual. In addition, stated above, Tvedt's second-layer water does not successfully overcome dualism and anthropocentrism.

In addition, several scholars have challenged the understanding of the flows of water in unmodified environments as qualitatively or ontologically different than the flows in built water systems. They affirm that water is not separate or external to human communities but entangled with them. This is important because of how we understand water and water consumption, watered processes (electrical power production, irrigation farming), watered products (electronics, crops, finished goods such as jeans), and watered entities (gardens and landscapes).

In addition, there are a number of water scholars in the field of anthropology and geography who have theorized that water has multiple ontologies.[70] Using the methodology of the ontological turn in anthology, this body of scholarship turns conventional categories of reality on their head. The field of anthropology had long understood culture to be varied and spatiotemporally particular, and that social structures and interactions within cultures resulted in many worldviews. However, while numerous variations in cultural and location resulted in equally numerous cultural infections and vantage points, anthropologists maintained that there was only one world. In contrast, beginning in the 1980s, this assumption came into question by what anthropologists adopting an alternative methodology that came to be called *the ontological turn*. Anthropologists began to propose that as there are varied, particular worldviews, there are also varied worlds. like with social constructionism, the objective of this body of water literature is to question the conventional ontological distinction between water and culture, or the derivative distinction between *modified water* and *unmodified water.* Hence, rather than an essentialist idea of water, multiple ontologies of water argues for the existence of multiple manifestations and epistemologies of water.

WE MISUNDERSTAND HOW WE RELATE TO WATER

Capturing and storing freshwater has always been crucial to any human community. Hence, how human societies have been shaped by bodies of water, as well as how they have interacted with

[70] Samer Alatout, "'States' of Scarcity: Water, Space, and Identity Politics in Israel, 1948–59," *Environment and Planning D: Society and Space* 26, no. 6 (2008): 959–982; Stefan Helmreich, "Nature/Culture/Seawater," *American Anthropologist* 113, no. 1 (February 2011): 133; Rutgerd Boelens, et al., "Hydrosocial Territories: A Political Ecology Perspective," *Water International*, 41, no. 1 (Jan 2016), 1–14. doi: 10.1080/02508060.2016.1134898; Julian S. Yates, Leila M. Harris, and Nicole J. Wilson, "Multiple Ontologies of Water: Politics, Conflict and Implications for Governance," *Environment and Planning D: Society and Space* 35, no. 5 (October 2017): 797–815. doi:10.1177/0263775817700395.

waterscapes, has long been of interest to scholars in the humanities and the social sciences.[71] For example, historian Karl Wittfogel sought to understand the rise of highly centralized governments and theorized that how they engaged with water—namely how they developed greater and greater infrastructure and administrative systems to capture, store and allocate freshwater stocks for large-scale irrigation-fed agricultural—influenced later highly centralized, authoritarian governmental structures.[72] Wittfogel, and others after him, came to see the interactions between water and culture as a dialectical relationship in which water and peoples act upon and therefore shape one another in an endless process.[73] Within the literature of water studies, there is a general agreement that societies are shaped by the waterscapes alongside them as well as how societies develop their built land and waterscapes to control, allocate, and harness various waters for domestic, agricultural, commercial, or industrial uses. However, it is important to note that until recently most scholars still assumed that societies are active forces that have agency (albeit distributed and often hierarchal), whereas water bodies and built water systems are passive and lack agency.

An important advance for water scholars was a turn towards understanding the interactions between water and culture as not simply dialectical but as mutually constitutive entities. This approach has been growing in influence with water studies, particularly in the fields of anthropology, geography, political ecology, and science and technology studies.[74] In seeking

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[71] Mattias Borg Rasmussen and Benjamin Orlove, introduction to "Anthropologists Exploring Water in Social and Cultural Life," *American Anthropologist* (July 2013): Jessica Budds and Jamie Linton, "The Hydrosocial Cycle: Defining and Mobilizing a Relational-Dialectical Approach to Water," *Geoforum* 57 (November 2014), 170–180. 10.1016/j.geoforum.2013.10.008.
[72] Karl A. Wittfogel, *Oriental Despotism: A Comparative Study of Total Power* (New Haven: Yale University Press, 1957).
[73] Budds and Linton, "The Hydrosocial Cycle," 173.
[74] Yates, Harris, and Wilson, "Multiple Ontologies of Water," 35, no. 5 (2017): 797–815; Barnes and Alatout, "Water Worlds," 483–88. doi:10.1177/0306312712448524; and Christopher Bear and Jacob Bull, "Guest Editorial," *Environment and Planning A: Economy and Space,* 43 (2011): 2261–2266. https://doi.org/10.1068/a44498.

to understand processes such as the accumulation of capital and the development of social inequity, geographer Eric Swyngedouw examined the social power that became manifest through construction and ownership of irrigation systems in Spain.[75] Swyngedouw theorizing that water-society engagements were not simply a dialectic process of independent agents acting upon and changing each other but were interactions of entities, such as social power and built water structures, that are internally related to each other. Swyngedouw therefore posited that water-society engagements must be understood as a mutually constituting dialectic, that is as "a combine physical and social process".[76] Not only are water and people engaged in a process of mutual becoming, but they become hybrids objects, part social, part natural.[77]

Building on Swyngedouw's work, several other schools have posited that the relationship between water and societies be understood not as subject-object, either water acting upon culture or culture acting upon water, but as internally related subjects mutually constituting each other. Geographers Jamie Linton and Jessica Budds explain that "Understanding [water and culture] as related internally means that properties that constitute them emerge as a function of their relations with other things and phenomena."[78] Hence, understanding the nature of relations between water and culture, and also the cultural understanding of those relations, is fundamental to understanding how given cultures use (and abuse) water. Hydrosocial approach is more engaged with understanding water-human engagements and arrangements as a mutually

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[75] Eric Swyngedouw, "Modernity and Hybridity: Nature, *Regeneracionismo*, and the Production of the Spanish Waterscape, 1890–1930," *Annals of the Association of American Geographers* 89, no. 3 (1999): 443–465; Swyngedouw, *Social Power and the Urbanization of Water: Flows of Power* (Oxford: Oxford University Press, 2004).
[76] Swyngedouw, "The Political Economy and Political Ecology of the Hydrosocial Cycle," *Journal of Contemporary Water Research and Education,* 142, no. 1 (2009), 56.
[77] Swyngedouw's work is based in part on the work of Bruno Latour, who positioned what he termed "quasi-objects" that were part social and part natural. See Bruno Latour, *We Have Never Been Modern,* trans. Catherine Porter (Cambridge, Massachusetts: Harvard University Press, 1993).
[78] Linton and Budds, "The Hydrosocial Cycle," 173.

constitutive dialectic of material waters and material culture. The former group uses the term "hydro-social" to indicate a very different way of conceptualizing water. Water as hydro-social understands water as relational and an emergent process, one that shapes and is shaped by culture. By examining the nature of all describe water-human engagements as misunderstood as agent-object relation, when in actuality water-human engagements are agent-agent. "Water has configurative, and, as some see it, agentive, power – water acts on society by overflowing or drying up and creating tensions and collaborations as it moves."[79]

The geographers are in general agreement that our ideas of water are socially constructed, that is how we interact with water is always mediated through the taken-for-granted conceptualizations about water that dominate discourses (about water resources). Geographers are interested in the intersectionality of water and people, in particular the causal influence water has in shaping culture and of human culture in shaping water. Said another way, how water and culture make and remake each other. Scholars in the dialectical-relational approach camp of water studies are in treated in reconstructing the model of the hydrological cycle into the *hydrosocial* cycle. They understand water as a substance that, by its nature, internalizes social relations. This group of scholars focus on how water and culture "make and remake each other", and because water and culture are internally constitutive. This group also examines how water knowledge emerges, and they give focus to how the constructions of water have political, social, or economic frames. By examining how the nature of water—that water becomes what it is in relation to other substances and is a co-constituent with culture—and that knowledge of water is situated in particular political, economic, and social frames, we may then understand that water internalizes social

[79] Karine Gagné and Mattias Borg Rasmussen, "Introduction–An Amphibious Anthropology: The Production of Place at the Confluence of Land and Water," *Anthropologica* 58, no. 2 (2016): 135–149. doi:10.3138/anth.582.T00.EN.

structures, such as power and social belonging. Additionally, by understanding the power structures can be internalized/embedded in particular enactments of water-human relations, such as hydroelectric dams, it becomes comprehensive the dynamics of how water arrangements may create and reinforce inequity and non-sustainability. Therefore, this group of scholars seeks to use the new model of the hydrosocial cycle to analyze how water arrangements, such as water supply infrastructure or water rights, might be reconfigured, which may transform arrangements into more just and sustainable ones. In the field of geography, the terms *hydrosocial* and *socio-natural* have emerged to describe the relational dialectic of water-human engagements.[80]

In contrast, the second group, situated largely in anthropology and archeology, is more engaged with understanding how water is both encoded with and expresses cultural meanings, and therefore engagements with water are often driven by unconscious patterns/attitudes.[81] Scholar have theorized that by revealing the meaning that has been deeply encoded into water, academics may better help the water sector, and in turn society at large, better understand how water is used and consumed. As Veronica Strang has articulated, water is both a material and a cultural substance, which has meanings poured into. These scholars have examined how the entity or structure of water and waters systems reveals meanings that have been embedded or encoded. Therefore, anthropologists and archeologists posit that understanding the meanings reveals important information for how to re-structure practices. Anthropologists Strange, Franz Krause, Hans Peter Hahn, Benjamin Orlove, and Steven Caton have slightly different emphasis

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[80] Budds and Linton, "Hydrosocial Cycle," 170–180. 10.1016/j.geoforum.2013.10.008; Rebecca L. Farnum, Ruth Macdougall, and Charlie Thompson, "Re-envisioning the Hydro Cycle," in *Water, Creativity and Meaning: Multidisciplinary Understandings of Human-Water Relationships*, eds. Liz Roberts and Katherine Phillips (London: Routledge, 2018).

[81] It should be noted that there is overlap between scholars in geography focusing relational-dialectics water relations and those investigating multiple ontologies of water. Likewise, there is overlap between scholars in anthropology and archeology focusing on meaning encoded in waterscapes and those proposing a multitude of water ontologies.

in how they theorize water-human relations. They think of water and materiality as intertwined with social construction, which many refer to as entanglements. The idea of entanglements is similar to socio-natural and hydrosocial but it is more inclusive of conceptual manifestations of water because they are concerned with understanding how human societies relate to water in more than material ways, such as through sensory engagement and conceptualization.[82] It might be better to explain that Strang is looking for meaning of water and also undercurrents of meaning, and the undercurrents of meaning are often the more powerful driver of use/consumption of water that the explicit, well-trod meanings. For this second group, there is an emphasis on the embedded meanings and how those shape water engagements. Hence, several scholars understand water as a repository of meaning and a constituent of identity. This contrasts with approaches to landscape, place, and location that emphasizes the everyday politics and interactions surrounding water. For their part, Orlove and Caton define waterscapes as "the culturally meaningful, sensorially active places in which humans interact with water and with each other."[83] The multitude of meanings embedded in water as well as processes, uses, products, and spaces are largely unaccounted for or misunderstood by water management experts and those who develop water policies at the local and international levels. Moreover, this incognizance of the meanings of water is a major impediment to improving water policy, water management, and water activism. Strang writes:

> The meanings themselves–water as the spirit, as life, as social, connective substance, as wealth and power, as generative source and regenerative sea, as nature, id, emotion and unconscious–all of these permeate the interactions that people have with water. Sometimes near the surface and visible, sometimes deeper and out of sight, they seep

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[82] Veronica Strang, "Re-imagined Communities: A New Ethical Approach to Water Policy," in *The Oxford Handbook of Water Politics and Policy*, eds. Ken Conca and Erika Weinthal (Oxford: Oxford University Press, 2016), 148.
[83] Benjamin Orlove and Steven C. Caton, "Water Sustainability: Anthropological Approaches and Prospects," *Annual Review of Anthropology* 39 (2010): 408.

> into every decision made about water use, wash over every aesthetic, religious or acquisitive vision of water, and swirl in powerful undercurrents in every quarrel about ownership, access and control of water resources.[84]

A deep examination of the meanings of water is necessary, they argue, because how everyday uses of water in the post-industrial West depends not only on the built water infrastructure systems but also on well-established yet often unconscious habits, and are interconnected with many other unconscious habits. For example, showering daily has become an expected daily habit, as are regular cleaning of domestic spaces, regular laundering of clothing, and imbibing beverages such as wine, milk, and coffee. Each of these habits has a significant water footprint, yet currently public discourses about water shortages are critical of protracted showers and uncritical of immaculately laundered towels or drinking coffee. Hence, scholars have begun to re-consider not only the material aspects of how humans engage with built and natural water systems but also the relational aspects of those engagement, and the social constructions of both.

Applying Water Studies Reconstructions to Water-Focused Ecotheology

Having discussed several leading theorizations of water and water systems, and how they contribute to understanding water-human relations, I now consider how water might be organized so that it is understood and represented in non-dualistic terms. While Tvedt's water-system approach is helpful in understanding how water may be apprehended and articulated in a number of productive ways, it is more appropriate to Tvedt's own research aim, which is to provide a method for analyzing and evaluating water and water-human relations that spans multiple academic disciplines. What REMOs and ecotheology would be better served by, as water becomes a focus for both, is an organizing framework rather than a systematics. The task of understanding water is enormously complex; water as a topic is as vast and elusive to capture

[84] Strang, *Meaning of Water*, 245.

as any river or sea, and one quickly becomes lost materially and epistemologically. For effective preservation, restoration, and conservation of the world's waters, we need an organizing framework as a heuristic. The purpose of such a framework is to make water visible and legible, as well as making clear the process of reimagining water. As such, this organizing framework has three primary categories: (1) fundamental propositions about water, (2) propositions about water-human relations, and (3) distinctions between water itself, water use, and watered processes/products. First, it facilitates understanding and representations of water in ways that honor the complexity of water. Second, it contributes to the ability to speak coherently and inclusively about water and water problems across disciplines and professions and from an ecological stance.

Further, this organizing framework is intentionally ecotheological as it considers water as both having its own existence apart from human culture but also, when intersected by human culture, as making and being made by culture, namely as deeply relational. In addition, it seeks to understand water as more than an object of inquiry or a resource to be captured and put to use. In this respect, it understands water as a material and cultural entity, and understands shortfalls of freshwater as a consequence of both material and cultural processes. In addition, as a framework for ecotheological consideration of water and water issues, it makes explicit the relationship between social constructions and everyday practices. It is intended as a means to reorganize and reconstruct the water that we think with in order to make possible more sustainable and just everyday water practices. In chapters one, I introduced my grammar of water, which is fits into the third category of the organizing framework. In chapters five and six, I will discuss how nature and human nature have been socially constructed, and how they might be reconstructed. The analysis and reconstruction within these chapters is important foundational

work to reimagining water and water systems, and it fits into the second category of the organizing framework. Lastly, in chapter seven, I will consider the reconstructions of water from water studies and will offer my own reconstructions, which fit into the first category of the organizing framework. I explain that water is best understood as occurring at multiple scales; as mutable or emergent, and as connective and relational.

Conclusion

The task of this chapter has been to discuss the historical process that resulted in the dominant dichotomous circumscribed constructs of the postmodern West and to identify significant consequences of those constructs, as well as to explore alternative ways of understanding and representing water and water-human relations. The larger goal has been to decode the dominant construct of water as homogenous, asocial, material object, and to offer the beginnings of reconstructions by introducing insights from water studies. Additionally, I discuss that the consequences circumscribed constructs are a utilitarian and profligate relation to water. Further, I reviewed reconstructions offered by several water scholars, and discussed my own a framework for organizing water knowledge.

The next task is to examine how nature and human nature have been socially constructed in similarly narrow ways, and how they might be reconstructed, which I will turn to in chapters five and six. But first it is useful to give a context for water-focused ecotheology and water-focused religious environmental engagement. This will help to understand why it is necessary to reconstruct nature and human nature, and how a focus on water protection and conservation fits within the field of ecotheology.

Chapter Three: The Context of Ecotheology with a Focus on Water

If the hydraulic force of religion could be turned toward conduct, there is nothing which it could not accomplish.

—Walter Rauschenbusch, *Christianity and the Social Crisis*[1]

Introduction

Having established in chapter one that water is socially constructed and the dominant ways that water has been constructed in the West are problematic, and, in chapter two, how water has been constructed in contemporary Euro-western culture, and organizing framework for reconstructing water and the potential for becoming water literate as an alternative strategy for advocates of water protection, conservation, and restoration, the next task is to discuss the backgrounds of water-focused ecotheology. The purpose of this chapter is twofold. The first purpose is to discuss the context of Christian ecotheology, and how water-focused ecotheology fits within it. Secondly, this chapter seeks to make the wide variety of water-focused ecotheology (Judeo-Christian) more comprehensible, and to highlight its relevance and challenges. An additional purpose of this chapter will be to serve as a reference point for subsequent chapters, in particular chapter four where I suggest a typology of water-focused ecology and introduce new characteristics.

Before moving forward, it is important to note that the term ecotheology as it is used both within and outside of the academy. Ecotheological reflection and praxis occurs in congregational settings as part of liturgy as well as community life; in educational settings formal and informal; and in popular and academic texts. In the academy, ecotheology is primarily a conceptual and discursive activity that is highly formalized and strives to be explicit and rigorous. In

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[1] Walter Rauschenbusch, *Christianity and the Social Crisis* (Louisville, KY: Westminster/John Knox Press, 1991), 6.

congregations, ecotheology has a wider range of expression, which I detail this more in chapter four. In addition to reimaging environmentalism from the perspective of religious life, ecotheology may find expression in new literal practices, physical conservation or restoration projects, educational programming, and legislative activism. While all of this activity is ecotheological, it is worth distinguishing between more formal ecotheological work and the less formal but equally significant and fertile work of ecotheological engagement. Therefore, I will keep a somewhat artificial separateness in discussing the ecotheological work of religious communities and the academy by referring to the former as religious environmental movement organizations (REMOs) and the latter as the discipline of ecotheology. Highly formalized ecotheological reflection does occur in congregational settings, such as the Pilgrim Place community and the Trinity Wall Street community, but it represents a small portion of most congregation's or organization's ecotheological praxis.

Ecotheology is a diverse and often fragmented discipline, and the social activism that has sprung from ecotheology is equally diverse and fragmented.[2,3] At its most essential, ecotheology is a critique of disenchanted and reductive social constructions of nature, and more broadly of instrumental nature-human relations. However, the myriad approaches to ecotheology among different faiths and denominations are highly inflected by the theological priorities and commitments of individuals and groups in addition to their particular social constructions of

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[2] Heather Eaton, "Where Do We Go From Here?: Methodology, Next Steps, Social Change," in *Christian Faith and the Earth: Current Paths and Emerging Horizons in Ecotheology*, eds. Ernst M. Conradie, Sigurd Bergmann, Celia Deane-Drummond, and Denis Edwards (London: Bloomsbury Publishing, 2015), 200. Eaton gives an account of a wide variety of ecotheological work in the academy, religious institutions and organizations, and among individuals. She notes that its expression is uneven, sometimes highly structured and other times not, which requires that ecotheological activity be understood as a spectrum, and necessarily intersecting with other disciplines such as biology and ethics.

[3] While this chapter concentrates Christian ecotheology and water-focused ecotheology, my statement are true of ecotheology in other faiths, such as Judaism, Buddhism, Hinduism, and Islam. As theological concerns of any given faith and social constructs in any particular culture will lead to divergences, ecotheology is necessary diverse.

ecological crisis and social change. The differences among ecotheologically engaged individuals and groups will be amplified when they focus on water and water practices. As I have established in chapter one, water is socially constructed yet those constructs are so circumscribed that few people understand that water is more than a material entity. In addition, water is often conceptually conflated with built water systems. Further, the use of water is so often habitual and incognizant that water is conceptually conflated with water itself. To add to the complexity, built water systems and water use practices are socially constructed. The flatness of this conceptual landscape leads to confusion and ambiguity. For example, ecotheologians and REMOs alike champion water as a social good but often fail to notice that safe, reliable water service (not water itself) is dependent on expensive, highly-engineered built water systems. Equally problematic are the social constructions of social change. Ecotheology has adopted current dominant views of social change from economics, psychology, and political ecology, which assumes changing individual attitudes and available choices will lead to more ecologically sustainable lifestyles.

One of the explicit aims of ecotheology is to cultivate social change—in light of environmental destruction and ongoing harmful practices, ecologically minded religious individuals and groups are rethinking and reforming their religious doctrine and praxis, and integrating new ecotheological perspectives into their everyday lives. Changing everyday practices is often much more challenging than reformulating doctrine. A challenge that ecotheological communities face is how to instigate and sustain everyday practices and also how to instigate social change in the larger culture.

In many of the water restoration and conservation projects organized by REMOs, water may be understood as having intrinsic value but is still socially constructed as exogenous of

culture or as abiotic, that is valued as a "natural resource." Therefore, an essential task of water-focused ecotheology is to make water visible and intelligible. Important steps for making water fathomable are 1) distinguishing that water is socially constructed, 2) differentiating water from water-practices, and 3) elucidating the undercurrents of meaning of water, built water systems, and water-practices that shape water-human engagements. Water-focused ecotheology offers analytical tools to grasp their meaning and cultural power, and may offer directions to reconstruct water and water-practices in light of ecotheological principles of sustainability, geocentrism, eco-justice, and eco-covenant with God.

In the first section, I will examine key points regarding the field of ecotheology, discuss the varieties of ecotheology. Next, I introduce a typology of Christian ecotheology, which gives an overview theological foundations, environmental foci and principles, and approaches across ecotheology.[4] The typology was formulated by religious sociologist Laurel Kearns, which was based on her study of Christian ecological activism in the early years of the religious environmental movement.[5] Kearns has divided the field into three broad categories and further inflected her categories with differentiating characteristics, which are both theological and sociological characteristic.[6] Her typology provides a framework to explore water-focused ecotheology's challenges as well as to consider what I call the potential for REMOs focused on

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[4] It is worth noting that Kearns's typology is classification of Christian REMOs, not ecotheologies. Kearns typology had been applied to academic theology by many. Other scholars have broken the field of ecotheology down in alternate criteria. A discussion of these can be found in: Willis Jenkins's *Ecologies of Grace: Environmental Ethics and Christian Theology* (New York: Oxford University Press, 2008), and Panu Pihkala's *Early Ecotheology and Joseph Sittler,* vol. 12 (LIT Verlag Münster, 2017), 26–31. Pihkala's is particularly interesting in giving attention to the work of scholars prior to 1967, whose contributions to ecotheology have been largely overlooked.

[5] Laurel Kearns, "Saving the Creation: Christian Environmentalism in the United States," *Sociology of Religion*. 57, no. 1 (March 1, 1996): 55–70 and "The Context of Eco-theology," *Blackwell Companion to Modern Theology*, ed. Gareth Jones (Malden, MA: Blackwell Publishing, 2004).

[6] Kearns calls these three categories "ethics," as she was organizing them by the political stances, social constructs as well as their theological commitments rather than along strict denominational or historical lines. In her later article, "The Context of Eco-theology," Kearns explains her use of the term ethic as being based on Max Weber's ideal type. For the sake of clarity, I have used the more general term category.

water to be a "hydraulic force" for ecological social change. Overall, Kearns's typology offers conceptual coherence for the work of water-focused ecotheology.

In the second section, I will discuss social change. A foundational aim of ecotheological Christians is to initiate ecological social transformation. However, as with many environmental movements, religious environmentalism assumes that values and interests are the fundamental catalysts of social change. However, scholars in several disciplines have begun to question theories of social change based on values or interests. To this end, the chapter introduces the work of social toolkit theory and social practice theory. I discuss the larger topic of social change so as to understand how the ecotheological field is developing and how water-focused ecotheological Christians move from raised-awareness to implementing their emerging ecotheological values. More specifically, I will discuss a theory of the cultural change favored in the field of sociology, and how different varieties of ecotheology do or do not understand/acknowledge/ascribe to practice theory or social constructionism.

Ecotheology Overview

Let us begin with a review of the ecotheology's goals, principles, and methodologies so that the reader may better understand why water-focused ecotheology has emerged. As my purpose is to provide the reader with a context to the more detailed discussion in following sections and chapters, this shall be a very brief overview. For more detailed overviews of the ecological movement, the interested reader may consult texts such as Cecilia Dean Drummond's *Eco-Theology*, Roger Gottlieb's *A Greener Faith*, and Stephen Ellingson's *To Care for Creation*.[7]

[7] Celia Deane-Drummond, *Eco-theology* (London: Darton, Longman and Todd, 2008); Roger Gottlieb, *A Greener Faith* (New York: Oxford University Press, 2006); and Stephen Ellingson, *To Care for Creation: The Emergence of the Religious Environmental Movement* (Chicago: University of Chicago Press, 2016).

Over the past five decades, ecotheology has emerged both as a response to criticism of the role religions thought, most notably Christian doctrine, has had in the environmental crisis and as a spiritual expression of ecological concern and care.[8] In the twenty-first century, the movement had a diverse range of organizations, denominations, and congregations. As we shall see below, there is a broad spectrum of theological affiliation within the movement ranging from conservative denominations to liberal ones. In addition, as a field of study, ecotheology has an extensive body of literature in which the authors offer analysis, criticism, and also exhort their fellow Christians to retrieve, reinterpret or reformulate the doctrines and praxis in light of ecotheological insights. What is positive is that there has been a great deal of work on acknowledging and confronting the role faith traditions have played in the current eco-crisis.[9] This is especially true of Christianity, both that they are guilt of having been a primary contributor to it and that many within Christianity have accepted responsibly and worked to change it. But unsustainable, destructive behaviors have remained largely intact and wide-spread despite considerable public awareness of their consequences and numerous government programs, non-governmental organization (NGO) campaigns, and industry measures to reform unsustainable practices. I will address the question of social change in more detail below. First, let us look at ecotheology's variety of methodologies and conclusions as well as common principles and areas of concern.

I will discuss the wide variety of ecotheologies below, but want to first note that common starting places for ecotheology are an analysis and revision of how nature, humanity, and how they are related, as well as how each is related to God. I have chosen to analyze the social

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[8] Stephen Ellingson, *To Care for Creation*, 150–153.
[9] John B. Cobb, Jr. afterword in *Wiley Blackwell Companion to Religion and Ecology,* ed. John Hart (Hoboken, NJ: John Wiley & Sons, 2017), 505–506, doi:10.1002/9781118465523.after.

constructs that often precede and therefore constrain one's understanding of nature and humanity—as I have discussed in chapters one and two, these are the constructs that are so given that we think with them rather than about then. I assert that a more helpful theological inquiry is to begin with constructs of nature. In 1967, Lynn White, Jr. called for Christians to "to rethink and refeel our origins and destiny," which most scholars in ecotheology have interpreted as a call for a revising, reinterpreting, and reimagining Christian doctrine and practice, and in a broader sense, worldview transformation.[10] However, what White was driving at was not to rethink merely humanity's role as monarch or vice-regent presiding over nature but rather to examine critically the dualistic and anthropocentric ways that Euro-western culture has thought of nature, which are so foundational that they regulate all our interactions with nature.[11] Thus, I have looked at what the social constructions of key ideas of nature and humanity. Additionally, it is also important to note that concepts of humankind and nature have a dynamic interplay with one another and cannot be reconstructed apart from each other. Hence, the reconstruction of culture that is the goal of ecotheology cannot be complete without a reconstruction of humankind and nature.[12] Other ecotheologians are in agreement that ecotheology calls for uncovering and reconstructing our taken-for-granted ideas of nature and humanity, and to for those focused on water, our taken-for-granted ideas of water. For example, Anna Peterson concisely elucidates why social constructions of humanity are of critical interest to scholars and activists when she

[10] Lynn White, Jr., "The Historical Roots of Our Ecological Crisis," *Science* 155, no. 3767 (March 1967): 1207.
[11] White, "Historical Roots," 1206.
[12] Steven Bouma-Prediger, *The Greening of Theology: The Ecological Models of Rosemary Radford Ruether, Joseph Sittler, and Juergen Moltmann* (Atlanta, GA: Scholars Press, 1995), 266–80.

writes, "How we envision humanness is deeply and inescapably intertwined with our understanding of ethical behavior."[13]

VARIETIES OF ECOTHEOLOGY

There is no standard typology of ecotheology, and as the field has matured, different schemes of classification have emerged. Many scholars have grouped ecotheology into branches as a means to decipher and interpret it, and have likewise grouped REMOs using the same criteria. The divisions are general based on the degree to which the author or organization advocates for reform of constructs of humanity or nature. Thus, most authors divide ecotheology into conservative, moderate (mainline), and radical. Some scholars have gone further and formulated detailed typologies.[14] One of the most useful typologies is that of Kearns, a scholar of the sociology of religion. While Kearns typology has been used to classify ecotheologies, in fact Kearns's created her typology as a heuristic for her sociological study of the Christian environmental movement in American denominations and para-church organizations in the 1980s and 90s.[15] Through her study, Kearns uses a synoptic method to differentiate and detail the theological foundations, social constructions, environmental foci, theories of social change, epistemological orientation, and worldview of those organizations. Kearns uses the common grouping of conservative, mainline, and liberal Christianity to organize the Christian environmental organizations, which labels them Christian stewardship, eco-justice, and creation

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[13] Anna L. Peterson, *Being Human: Ethics, Environment, and Our Place in the World* (Berkeley, CA: University of California Press, 2001), 208.

[14] In several typologies, including Kearns's, process theology and ecofeminist theology are unclassified or noted to have authors and adherents in both moderate and radical branches. See Panu Pihkala, *Early Ecotheology and Joseph Sittler*, 26–31 and Ernst M. Conradie, *An Ecological Christian Anthropology: At Home on Earth?* (Aldershot, UK: Ashgate, 2005), 97–98.

[15] Kearns's article was based on her dissertation. Laurel Diane Kearns, "Saving the Creation: Religious Environmentalism," PhD diss., Emory University, 1994.

spirituality, respectively.[16,17] Below, I have grouped the characteristics into two sets, which the reader may find below in Table 1. The first five characteristics are theological characteristics and parse aspects of how each type approaches ecotheology. These characteristics represent the theological constructs that each type assumes yet often has not articulated, which include their social constructions of nature and humanity. The second set of characteristics are ones that I call "sociological/epistemological characteristics," as the foundational assumptions and attitudes of the organizations that Kearns studied. By parsing theological characteristics from the theories of social change and social constructions of nature and humanity—what I deem to be a triple-axis

Theological Characteristics	Sociological/Epistemological Characteristics
Starting Point	Roots of the Environmental Crisis
Theological Appeal	Environmental Issues
Image of God	Prescribed Response
Image of Nature	Social Change Orientation
Human-Nature Relationship	Intellectual Tools
	Worldview

of analysis from the perspectives of theology, sociology, and epistemology—Kearns provides a valuable analytic tool for similar differentiation

for water-focused ecotheology.

After introducing her types and delineating their characteristics, Kearns explains how theological principles intersect with ecological principles and view of social change to create dramatically different ecotheological worldviews and mandates. By examining in detail how the groups agree and diverge, several underlying priorities and fundamental assumptions are

[16] Kearns, "Saving the Creation," 57. Kearns's intention here is to construct three ideal types of ecotheological thought and activism.
[17] See Kearns, "Saving the Creation," Table 1 on 56.

identified, which creates a decidedly richer understanding of the movement. For this project, Kearns typology offers two things. First, by drilling down to the often overlooked subjects of the social construction of nature and humanity's relations to nature, as well as their assumptions of social change, Kearns accounts for why there is such diversity of perspective and focus among ecotheological Christians, as well as between those working in REMOs and those in the academy. By organizing the movement into types and inflecting each category with theological, ecological, and social characteristics, Kearns provides a lexicon for discussion of the social constructions and hierarchies of the ecotheology movement. Second, and more important, Kearns typology demonstrates how foundational to an organization or individual's ecotheological outlook the social constructions of nature and humanity are. Creating what I call a double axis is the intersection of social change theory with theological constructions of the proper relations of God, humanity, and nature. The value of having Kearns's typology as a triple-axis analytical tool of the elements that comprise the overall ecotheological perspective is significant, which will become even more clear in chapters five, six, and seven, when look at the analysis and reconstructions of nature, nature, humanity, and water from the literature of ecotheology and from my own work.

The Common Concerns of Ecotheology

Ecotheology and the larger religious environmental movement represents an extensive and varied collection of approaches, methods, and responses to complex environmental problems. However, it must be noted that there is consensus among ecotheological Christians that there is an ecological crisis and there is a growing consensus that it is anthropogenic.[18] In addition,

[18] Evangelical and Pentecostal Christians are less likely to agree that ecological problems, such as climate change, are anthropogenic. However, there is a body of research that demonstrates how political affiliation has a significant impact of whether conservative Christians agree with anthropogenic climate change.

ecotheological Christians agree that a majority of ecological damage can be repaired and, in the future, avoided thought re-evaluation of the elements of Christian doctrine that have led to dualism and anthropocentrism. As discussed above, there is consensus that elements such as "Human-Nature Relationship" need evaluation but there is disagreement about the degree that elements need reformulation. Conservative ecotheological Christians favor a retrieval approach, whereas moderates advocate for reevaluation, and liberal and radical ecotheological Christians (and post-Christians) argue for reconstruction.[19]

Ecotheological Christians critique the instrumental or romanticized understanding of nature. Throughout much of western European and American history, nature has been understood as a supporting cast and stage upon which the human drama is played.[20] When nature has been valued and protected, it has generally been for its instrumental value to human populations, particularly to land- and livestock-owners. Such a valuation reflects that humanity values itself, its existence and comforts, rather than truly values nature. Against this self-centered understanding of nature, ecotheological Christians argue that nature must be re-envisioned as valuable for its own sake.[21] Several theologians argue that some of the most damaging understandings of nature have been the dualistic constructs inherited from Greek philosophy, where nature is understood to be ontologically different from humanity.[22] I will discuss this in much more detail in chapter five.

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[19] John Grim and Mary Evelyn Tucker, *Ecology and Religion* (Washington: Island Press, 2014), 42.
[20] Terje Tvedt, *Water and Society: Changing Perceptions of Societal and Historical Development* (London: Bloomsbury Publishing, 2015), 15.
[21] For example, Sallie McFague, "Life Abundant: Rethinking Theology and Economy for a Planet in Peril," *The Journal of Religion* 84, no. 2 (2004), 31–33 and *Super, Natural Christians: How We Should Love Nature* (Minneapolis, MN: Fortress Press, 1997), 57–58.
[22] Rosemary Radford Ruether, *Gaia and God: An Ecofeminist Theology of Earth Healing* (San Francisco: Harper San Francisco, 1992), 22–26, 230–231; Warren S. Brown and Brad D. Strawn, *The Physical Nature of Christian*

Ecotheological Christians universally hold that God's love of nature is evident throughout scripture and doctrine. In the biblical texts, humanity is charged with the protection and conservation of nature, or, when necessary, the restoration. Ecotheological Christians hold that, as the whole of creation was made and has a covenant with God, conservation and a focus on God and others is more central to right praxis, and centering one's religious life on prosperity wealth and social status is contrary to right praxis. Indeed, humanity is expected to value and cherish nature as God does. Hence, to be a righteous person, the ecotheological Christian is expected to make ecological acts of preservation, conservation, and healing a part of his/her praxis. Such acts can be large, such as lobbying for stronger ecological regulations and laws, or small, such as using less water to water one's roses. God intrinsically values nature, and as such, ecotheological Christians likewise value nature.

Further, ecotheological Christians roundly critique the understanding of humanity as the pinnacle of God's creation. Many argue that the domination of humanity over nature is one of the most fundamental causes of the current ecological crisis. In addition, many scholars have written that ideas of humanity that are rooted in the Judeo-Christian tradition negatively shaped how contemporary Euro-western culture understands humanity.[23] In the body of ecological literature, many new models of humanity have been suggested, such as that of "steward," "gardener," and "person-in-community." While ecotheological Christians disagree about the exact model, ecotheological Christians universally call for a transformation of the role of

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Life: Neuroscience, Psychology, and the Church (Cambridge: Cambridge University Press, 2012), 15–23. doi.org/10.1017/CBO9781139015134; and Theodore Hiebert, *The Yahwist's Landscape: Nature and Religion in Early Israel* (New York: Oxford University Press, 1996), 3–29.

[23] One of the most well-known criticisms is that of medieval historian Lynn White Jr.'s, which argues that attitudes towards nature, and humanity's role as rightful mater over nature, cannot be understood apart from their origins in Christian dogma of later Middle Ages and early modern period in western Europe. See White, "Historical Roots," 1203–1207.

humanity. More liberal ecotheological Christians advocate for a low anthropology; they advocate for a model of near equity among all God's created beings. More conservative ecotheological Christians agree that the dominance of humanity must be forsaken, but envision a shift from humans-as-monarch to humans-as-regent model.

A consensus of ecotheological Christians assert that there is a long tradition of ecological values within scriptures and doctrine that have be overlooked in the modern era in favor of more dominant values and themes. For example, the teachings of St. Francis of Assisi are commonly cited as being ecotheological but until recently Francis was known primarily for his teaching on monasticism and poverty. Ecotheological Christians assert that retrieval and reintegration of long-standing ecological values is central to healing the creation. However, others argue that truly ecological thought is anachronistic to the biblical texts.[24] Other elements of the tradition are easily retrievable without being anachronistic. For example, the edicts in both the Hebrew Bible and the New Testament on care of the vulnerable and love of the neighbor. Similarly, the tradition in the prophetic text as well as Samuel I and II, and Chronicles I and II that call on God's people to turn away from false idols, to return to God, and to restore social justice.

Two shortcomings that ecotheology has not given enough attention to is a sober critique of capitalism, in particular neoclassical economics, and the idolatry of science and technology. This is likewise the case with the smaller body of literature of water-focused ecotheology and that of REMOs. A small number of theologians have addressed economics from the perspective of ecotheology, such as John Cobb and Walter Brueggemann. Ecofeminist theology has been critical of the social construction of the scientific method as absolutely objective and free of bias,

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[24] Walter Brueggemann, *Disruptive Grace: Reflections on God, Scripture, and the Church* (Minneapolis, MN: Fortress Press, 2011), 171; and Lawrence Troster, "What is Ecotheology?," *CrossCurrents* 63, no. 4 (2013): 380–385.

and have demonstrated that much damage to the environment can be attributed to an uncritical view of science and technology. I bring these shortcomings to the fore as capitalist structures and the hegemony of science and technology each dominate water issues and any large-scale, establishment led responses to water issues will certainly be influenced by their worldviews and governed by their particular social constructions.

It is clear that ecotheology is critical of chronic, endemic exploitation of the environment and have a desire to reverse the practices that threaten the Earth through a prophetic voice that proclaims God's love of nature and humanity's responsibility to be a steward. John Cobb, Jürgen Moltmann, Sallie McFague, Paul Santmire, and Rosemary Radford Ruether each find that ecotheology is both a transformation of thinking and also a transformation in everyday acts, in both everyday practices and religious praxis.[25] Hence, ecotheology is not simply a new doctrinal stance or a remedy to a spiritual crisis but is a complex, periphrastic response to the emerging historic reality of ecological destruction.

The ecotheological Christians' response recognizes the inadequacy of conventional doctrines and practices, and seeks to reformulate them, which in turn will be transformative of Euro-western culture. However, much of ecotheology is uncritical of conventional theories of social change.

Theories of Social Change

In this section, I will discuss the process of social transformation, which I understand as a primary goal of ecotheology and water-focused ecotheology, and to discuss the causal relationship between culture and social change. Few scholars within the field of ecotheology have written extensively about how social movements initiate and sustain social change. As I

[25] Bouma-Prediger, *The Greening of Theology*, 270–71.

discussed in chapter one, within the water sector, many authors assume an ABC model of social change or a value-belief-norm theory.[26] A number of ecotheologians have address intentional social change, among them Kearns, as well as Anna Peterson and John Cobb. Kearns has relied on the work of sociologist Ann Swidler, whose seminal article, "Culture in Action," argued for a dramatic rethinking of what relation culture plays in determining social change. Swidler argues that culture does not shape action by establishing cultural values or ends but by enabling and constraining a culture's repertoire of meanings. Additionally, Swidler posited that culture has a stronger constraining/facilitating influence in unsettled times than in settled times, but cautions that culture's influence is unevenly distributed throughout culture. Also, some cultural elements had more enduring effects on action than others.

What I have found compelling about theories of social change is that it shifts the gaze, or changes the "unit of analysis" within discourses of ecological transformation. Swidler writes that culture does not influence action by establishing goals/ends "but by giving [people] a vocabulary of meanings, the expressive symbols, and the emotional repertoire with which they can seek anything at all."[27] For Ecotheology and REMOs, Swidler can be a guide to what effects cultural transformation directly and enduringly, and where to direct their work. Christian churches and academics have little direct political power. However, they may have more power to transform cultural codes that underlie how post-modern, industrial societies construe nature and humanity's interactions with nature.

A central aim of ecotheology and water-focused ecotheology is to change water-human engagements, from instrumental, consumptive or harmful to respectful, relational and

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[26] ABC stands for attitudes, behaviors and choices.
[27] Swidler, "Cultural Power and Social Movements," in *Culture and Politics,* eds. Lane Crothers and Charles Lockhart (New York: Palgrave Macmillan, 2000), 27.

sustainable.[28] Thus, an important question to consider is what measures lead to transforming engagements? Much public rhetoric, policy discussions, and water sector literature assume a model of behavior change based on individual, rational actors selecting one action at a time to maximize their own happiness or utility (rational choice theory).[29] Alternatively, some scholars and policy makers have adopted value-belief-norm theory, which posits that a hierarchy of personal and ecological values govern individual choice, as long as there are no other constraints on the individual, such as those of social institutions or infrastructure.[30] Little of the ecotheology literature has critically addressed whether social change may be instigated at the individual level, by a charismatic leader, or by social institutions such as universities, governments, or religious communities. Clearly, intentional social change does occur, and social movements such as the abolitionist, animal welfare, and suffragist movements of the nineteenth century were purposeful, grassroots movements. What I wish to explore is if the prevailing assumption that social change is instigated from the bottom up, by "winning hearts and minds" of individuals is how social change occurs. Therefore, I will examine two variations of practice theory that are well regarded: the culture as toolkit theory and social practice theory. It should be noted that the two theories do not contradict one another but have different emphases. Indeed, distinguished scholar of culture

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[28] Heather Eaton, "The Challenges of Worldview Transformation: To Rethink and Refeel Our Origins and Destiny," in *Religion and Ecological Crisis: The "Lynn White Thesis" at Fifty,* ed. Todd LeVasseur and Anna Peterson (London: Routledge, 2016), 133; Deane Drummond, *Eco-Theology*, 179–180. See Conradie, *Ecological Christian Anthropology*; Peterson, *Being Human*; and Christiana Peppard, *Just Water* (Maryknoll, NY: Orbis Books, 2014).
[29] Emily Huddart Kennedy, Maurie J. Cohen, and N. Krogman. "Social Practice Theories and Research on Sustainable Consumption," *Putting Sustainability into Practice: Applications and Advances in Research on Sustainable Consumption* (Glasgow: Edward Elgar Publishing, 2015), 3–4; and Tom Hargreaves, "Practice-Ing Behaviour Change: Applying Social Practice Theory to Pro-Environmental Behaviour Change," *Journal of Consumer Culture* 11, no. 1 (March 2011): 79–99.
[30] Kennedy, et. al., "Social Practice Theories and Research on Sustainable Consumption," 4.

William Sewell argued that the two theories should not be understood as in opposition but as complimentary.[31]

CULTURE AS TOOLKIT THEORY

The culture as toolkit theory is most strongly associated with the work of sociologist Ann Swidler. The toolkit theory of culture was developed by Swidler and others in response to theories of culture's influence on action by Max Weber and Talcott Parsons. Based on the work of Clifford Geertz, Pierre Bourdieu, Sherry Ortner, and William Sewell, Swidler has written that Weber's concept of ideas and Parsons' concept of values governing or inducing action located the guiding force of culture in the minds of individuals, which do not predict cultural transformation.[32]

A central focus of Swidler's early work is to account for how cultures respond to social stress and crisis. Swidler asserts that individuals and groups within a culture recognize that the systems of meaning that worked in the past have ceased to function vitally, and the culture reacts by engaging in a reworking on its systems of meaning.[33] Swidler begins by explaining that the predominant models of how a culture influences the actions of individuals and groups have assumed that culture shaped action by providing ultimate values. Hence, values were identified as the "central causal unit" of culture. However, Swidler and many other sociologists reject this formulation. Swidler explains that this formulation of cultural change cannot account for the persistence of "styles" of actions after the values of a culture have shifted. For example, why Protestant customs such as somber attire remained *de rigueur* after the dominance of Calvinistic

[31] William H. Sewell, Jr. "The Concept(s) of Culture" in *Beyond the Cultural Turn: New Directions in the Study of Society and Culture*, eds. Victoria E. Bonnell and Lynn Hunt (Berkeley: University of California Press, 1999), 47.
[32] Ann Swidler, "Culture in Action: Symbols and Strategies," *American Sociological Review* 51, no. 2 (1986): 25.
[33] "Unsettled times" is a term coined by Swidler in "Culture in Action," 273–86.

thought had waned. Theories of cultural change based on values detraining action cannot account for real-world social change.

As values have been found by sociologists not to be a causal link, Swidler proposes a new theory of culture that establishes symbolic forms as the essential units of culture, and therefore the pivotal causal elements. Swidler explains that symbolic forms include worldviews, art forms, language, folklore/myth, and religious ceremonies. Swidler also explains that symbolic forms are the singular instrument through which people may "experience and express meaning." Swidler further writes that the symbolic forms may be understood as *tools* that individuals and communities select in varied configurations as they interact, labor, or entertain themselves. Swidler asserts, "A culture is not a unified system that pushes action in a consistent direction."[34] Thus, culture may be thought of as a storeroom of publicly available tools, which Swidler refers to as *tool kits*.

Additionally, Swidler clarifies that individuals and communities rarely act in direct and discrete ways, nor always according to values or interests. Instead, individuals and communities act in collections of acts, which Swidler calls *lines of action*. Lines of action are usually constructed within the context of other actions and have culturally imposed limits. For examples, automobile drivers choose a speed at which to drive based on their needs and the conventions of driving in their culture. Hence, culture plays a role in the action of driving as does the ability that the need of the driver to arrive on time. Swidler also uses another phrase, that of *strategies of action,* which she defines as "persistent ways of ordering action through time."[35] Many strategies of action are "pre-fabricated," in the sense that they are conventional actions common to a

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[34] Swidler, "Culture in Action," 277.
[35] The term strategy is used in the more general sense, indicating that the actions have an organizing principle, or arise from habits or worldviews. See Swidler, "Culture in Action," 273.

culture, such as relying on extended family in hard times or the ethics and practices that are standardized to a profession or trade. Further, strategies of action are built from the tool kit that is provided by culture. Therefore, culture has influence on action not by establishing values, but in being the storeroom of tools from which individuals and communities select strategies of action. When toolkits no longer work, a community searches for alternative ideologies and strategies of action. This is what Swidler terms *retooling*, which is similar to reconstruction in that it is a social process that renovates existing strategies and establishes new ones. They do this by constructing new symbols—in the form of rituals, stories, vocabulary, and worldviews. From the retooled repertoire of symbols, individuals and groups then construct new strategies of action.

Swidler shows that ecotheological Christians groups should effect change not by defining ends of action but by offering new cultural components that culture will use to construct new strategies of action that are sustainable and eco-ethical. As Swidler writes:

> …culture's causal significance not in defining ends of action, but in providing cultural components that are used to construct strategies of action." This revised imagery—culture as a "tool kit" for constructing "strategies of action," rather than as a switchman directing an engine propelled by interests-turns our attention toward different causal issues than do traditional perspectives in the sociology of culture.[36]

Therefore, what Swidler's offers to understanding ecotheology (and an emerging water-focused ecotheology) is the idea that culture provides shape to ecological activism but does not dictate ends. As Swidler contends, the influence of cultural norms and values is not the "switchman" that we think it is, and the models of social change that depend on this assumption have limited use to explain or predict social practices. The prevailing wisdom in Euro-western culture is that changing social values, such as prizing nature or protective legislation for clean air and water,

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[36] Swidler, "Culture in Action," 273–274.

will influence how we treat the environment. Time and again Americans say they value clean air and water, while they continue to drive cars that have a had carbon footprint or allow corporations to pollute waterways with few economic, political or social consequences. Swidler's work can account for the gap between values and behaviors. Further, Swidler's work indicates that what will genuinely change behavior is a changed worldview that sees the interconnectedness of all of creation, that believes the creation is loved by God, and humanity has an obligation to protect and conserve the whole of creation.

Hence, in light of Swidler's scholarship, we may see that ecotheological Christians will respond to eco-crisis and be bounded by culture but the changes that come about are indirect and are shaped but not dictated by culture. Swidler's work predicts that deeper change will result from changes in paradigms rather than changes in values. Therefore, by knowing Swidler's theory and language, we better understand what is happening for ecotheological Christians as they engage in water-care projects and advocacy. To borrow Swidler's words, her work gives us "more sophisticated theoretical ways of thinking about how culture shapes and constrains action…."[37] For ecotheological Christians to more fully understand how cultural transformation takes place through the retooling of cultural symbols would be greatly helpful to furthering their goals.

SOCIAL PRACTICE THEORY

In other areas of the water literature, mainly in geography, sociology of consumption, and political ecology, some scholars have suggested an alternative model of change based on social practice theory. Rather than individual, rational actor consciously selecting actions that are directed towards a goal (maximize utility), social practice theory has a model of collective,

[37] Swidler, "Culture in Action," 284.

unconscious habits that are shaped by social structures, such as constructs, institutions, and contexts. These habits are called *practices*. Sociologist Andreas Reckwitz explains that a practice is " … a routinised type of behaviour which consists of several elements, interconnected to one another: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge."[38] Therefore, a shower is not taken in isolation, with only hygiene obliging it and a water bill or conservation ethic limit it. Rather, the act of showing is a social practice that is shaped by social institutions such as family or office culture, as well as the availability of facilities and materials (a bathroom, soap and hot water).

Social practice theory has similar roots to cultural toolkit theory, and also seeks to understand the causal power of culture on action.[39] An important theme of social practice theory to reconcile the power of social structures with individual or collective agency of actors. However, rather than focusing on structures or actors, social practice theory gives greater attention to practices. Practices are can be understood as the routine actions of individuals, and are characteristically unconscious, habitual, and automatic, such as making a telephone call or walking down the street. Alternatively, practices can be understood as collective actions of organizations, and are characterized by their routine and taken-for-granted nature, that the subroutines of the activity are well known they seem to "the way you do it." For example, a librarian checking out a book to a patron or waiting in line to vote. Social practice theory seeks

[38] Andreas Reckwitz, "Toward a Theory of Social Practices: A Development in Culturalist Theorizing," *European Journal of Social Theory* 5, no. 2 (2002): 243–263, 249.
[39] Bourdieu, Michel Foucault, and Sherry Ortner, among others, were seeking to find a middle ground between the determinism of previous theories such as those of Karl Marx, Max Weber, and Talcott Parsons and the lack of agency of structural models of the mid twentieth century (social structures, such as institutions and class, enable and limit action).

to understand why people do what they do, and what might factors alter or put an end to a practice, and therefore give focus to the elements of practice rather than the individuals or organizations, or their particular choices. There are three elements of any practice: materials, meanings, and competencies. By materials, theorists mean objects, infrastructures, tools, or even bodies. By meanings, theories mean symbols, images, and ideas. By competence, theories mean skills, knowledge, know-how, analysis, and constructs. Individuals or groups enacting practices are called "carriers." Another important aspect of social practice theory is that a practice may be bundled with one or more other practices. When they are bundled lightly, they are called bundles and when they are combined tightly, they are called complexes. For example, taking a taxi is part of a complex of practices that involve walking, communicating, riding, driving, and exchanging currency. In terms of water-focused ecotheology, what social practice theory can account for are materials, such as water and impervious surfaces, tacit and unconscious knowledge, and meanings. It is a different way of understanding how humans, or human populations, engage with one another as well as infrastructure and waterscapes, and how action is shaped by more than the external factors such as the cost of water or water-wise technology. Additionally, it is an alternative way to theorize social change and how activists, policy makers, and the water sector may come together to reform consumptive or harmful water practices.

As I discussed in chapter one, the work of Elizabeth Shove, sociologist of consumption, has been especially compelling. Shove challenges the merit or effectiveness of the dominant theories of social change, specifically rational choice theory and value-belief-norm theory.[40] In addition, Shove observes that these positivistic and rationalists explanations have dominated

[40] Elizabeth Shove, "Beyond the ABC: Climate Change Policy and Theories of Social Change," *Environment and Planning A: Economy and Space* 42, no. 6 (June 2010): 1273–85. doi:10.1068/a42282, 8.

environmental policy and government sponsored interventions yet do not effectively predict behavior, and their use is at best a red herring and at worst perpetuates a mistaken assumption that the social change needed to curtail or reverse unsustainable practices can be made at the individual or even household level. Shove writes, "At this point it is important to acknowledge that the ABC is not just a theory of social change: it is also a template for intervention that locates citizens as consumers and decision makers and that positions governments and other institutions as enablers whose role is to induce people to make pro-environmental decisions for themselves and deter them from opting for other less desired courses of action."[41] Additionally, Shove is critical of the core premise of rational choice or value-belief-norm theories, which is that behavior is governed by a rational mind directed towards external ends or guided by internalized values, and therefore places blame on individuals while ignoring institutions and social structures that create and perpetuate ecologically harmful products or processes. Shove's has worked to apply social practices theory to an analysis of consumption and its efficacy for predicting social change.

This exploration of cultural toolkit theory and social practice theory is not intended to advocate for or against either. My purpose is to demonstrate that conventional ways of understanding the drivers of activity that has a high ecological impact, such as household landscape irrigation, washing clothing, computer usage, consuming meat and coffee, and driving automobiles, need reconsideration and different analysis. Our conventional assumptions of what drives these activities and how to reform or do away with them are too simplistic, which effectively distracts from uncovering the more complex but more useful understanding of the complex dance between people and their social and material environment. Human beings are

[41] Shove, "Beyond the ABC," 8.

invariantly social beings. It is unsurprising that undercurrents of encoded meaning or epistemological assumptions would enable and limit our actions, in particular activities that are largely performed unconsciously or habitually and are connected to social acceptance or power. The consumptive use of water is not necessarily determined by monetary limits or by individual values. Rather, water practices (several of which are consumptive) should be understood and investigated as occurring within complex interplay of meaning, materials, and competencies, as well as amalgamated into complexes of practices. By using social practice theory, with its focus on the interplay of practice elements and bundles, ecotheologians and REMOs may gain insight into novel, alternative practices that cohere to ecological values.

THE THEOLOGICAL TASK

For the purposes of REMOs and SEMOs, I do not think that a full application of toolkit theory or social practice theory is useful. The learning curve to become fluent in either theory will likely lead to resistance, if not outright rejection, of its application. However, using some of the larger ideas of these theories has great potential to break apart conventional assumptions and spark innovative thinking. For example, the shift in focus away from understanding harmful ecological practices as individual, rational, or autonomous to collectedly ordered, semi-automatic or habitual, and contingent upon existing systems and social expectations/conventions. It is especially important to understanding that the uses of water are supported and constrained by more than materiality or infrastructure capacity. The human need for social acceptance and approval is deeply engrained, and overcoming the unconscious social construct that drive everyday water-use is therefore highly resistant to novel, external influences. REMOs contribution to unpacking the social meanings of watering a garden, washing one's clothing, eating meat, or purchasing electronics. By understanding what water-uses are the most intensive or disruptive within a region, REMOs might help reimagine those practices through unpacking

their elements and reimagine structures. Key water-uses to give focus to are high-intensity agriculture, transportation's impact on bodies of water, and microchip production. REMOs might address water-use by examining components of a water-use and looking for the social expectations and meanings that intersect it, or what tacit meanings are embedded within it.

An understanding of the backgrounds of ecotheology makes emerging water-focused ecotheology activism more comprehensible. Knowledge of the influences, strengths and weaknesses as well as an understanding of the link between values and action, allows the reader to see new connections and reveals deeper meanings. Moreover, to understand how social movements evolve over time, within a culture but also impacting the larger culture, provides important insights. Such understandings are tremendously important as a large religious movement, such as ecotheology, matures and demands attention from a broader, secular audience. Additionally, to understand the movement as it branches into new territory such as water-focused ecotheology is valuable, because water activism is itself a large and complicated subject. The specific issues within the larger field, such as freshwater shortages and pollution, are like waterscapes itself—they defy boundaries and often co-mingle with other issues to create intermediary boundaries.

Hydraulic Force—the Quiet Strengths of Congregations and REMOs

This section will discuss the uncommon strengths of ecological congregations and religious organizations bring to the environmental movement, making them an unexpected but acutely relevant voice for ecological advocacy in general and water in particular. An important aspect in examining the context of ecotheology is to discuss what sets congregations and religious organizations apart from the majority of secular organizations that are involved in the environmental movement. Congregations and religious organizations have uncommon resources partially based in the nature of their structure and organization, which in turn make the usually

adept grass-roots organizations. Some strengths are characteristic of voluntary organizations that are place based and others are characteristic of religious communities. Additionally, they have strengths that arise from the nature what activity they most engage in: fellowship. Just as ecotheology has deepened the conversation about ecological conservation and restoration, congregations and religious organizations engaged in water-focused ecotheology may deepen the conversation about water conservation and restoration. John Cobb described some of these as "distinctive contributions," such as the principles of preferential option for the poor, subsidiarity, and disinclination towards usury.[42] Also, sensitively to justice issues, such as solidarity with the poor, and the wholeness of creation in God.

INSTITUTIONAL ADVANTAGES

A strength of ecological congregations and religious organizations is that they, being a long-term community, have organizational base and depth of capacity. What is interesting is that they, like the Israelites that Walter Brueggemann uses as his example of the alternative community, have the experience of lamentation and return to covenant.[43] They see together that the promise of Pharaoh is empty and that they must walk forward together to find their way to the Promised Land, which is only achieved through returning repeatedly to the covenant with God. Similarly, a faith community comes to understand that their understanding of water is based on broken heuristics and solutions to scarcity are based in narrow understandings of water as homogenous and utilitarian. A community that has deep institute organization is able to search for better understandings and representations of water, and test proffered solutions against them.

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[42] John B. Cobb, Jr., "Theology and Ecology," *Colloquium*, 25, no. 1 (May 1993), 9.
[43] Walter Brueggemann discusses alternative communities in several publications, most notably Walter Brueggemann, *The Prophetic Imagination*, 2nd edition (Minneapolis: Fortress Press, 2001) and *Sabbath as Resistance: Saying No to the Culture of Now* (Louisville, KY: Westminster John Knox Press, 2014).

All congregations and religious organizations have resources to offer the environmental movement due to their unusual characteristics. Demographically speaking, congregations can be less homogenous groups than many others in terms of income, race, political affiliation, and, most notably, age than other local organizations of similar size.[44] Additionally, congregations, and the religious organizations that evolve from them, can be what Jonathan Haight calls "unexpected validators of moral assertions," by which he means that they have a great claim of authority, especially in our times when many public institutions have lost authority, for example governments, the media, higher education, and archdiocese and denominations. Moreover, congregations and religious organizations can function as a "social contagion," meaning that because members of the congregation may each go out into the world and share about their beliefs, they may transmit ideas about water and influence the behavior of others.

Congregations and religious organizations have a variety of demographic compositions, which can be an asset. They can be large or small, rich or poor. They can be part of a highly centralized hierarchy, such as the Catholic Church or the Latter-day Saints. Alternatively, they can be part of a "low church" denomination or part of the emerging church. Faith communities are more likely than many other social institutions to be multi-generational, to have a core membership that last over many years, and to value collaborative work. What faith communities have in common is their focus on right living and larger ontological questions such as who is God, what is our relationship to God, why was the world created? Many faith communities are experienced in ecumenical work, and are skillful in dialoging with other demonization and religions as well as with secular communities, which is a less common but crucial skill set in working on complex issues.

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[44] As compared to service organizations, local political parties, PTAs, and neighborhood clubs.

CONVOCATIONAL SKILLS

Further, congregations and religious organizations also have strengths and skills because of what they do most—attempt to live a life of informed and shaped by their faith. Christian ethicist Robin Lovin suggested, because congregations ground themselves in sacred texts that keep them focused on larger ontological questions, they are unusually cohesive and persevering organizations.[45] Lovin also says that congregations and religious organizations tend to see the transitory nature of history forms, such as democracy. As the attention of congregations and religious organizations is on sacred texts and liturgy, they are less likely to put their faith in human institutions to "heal the world" and more faith in the power of love and compassion, smaller acts, to make a difference. Different view of past, different view of future, and different view of human institutions. In addition, faith communities have a different relationship to the future. Theologian Reinhold Niebuhr writes, "The New Testament does not envisage a simple triumph of good over evil in history. It sees human history involved in the contradictions of sin to the end."[46] The same might be said of finding alternatives to fossil fuels or to the insolubility of water shortages in urban populations located in arid or semi-arid regions. Congregations and religious organizations differ from other voluntary organizations in that they are aware of human frailty, and are willing to make room for "learning in public," which will be necessary for solving the most complex problems, and facing very difficult moral questions.[47] Also, congregations may have a different sense of hope as they may recognize the difference between the world as it is against the world as it could be, which is a major theme of the biblical

[45] Robin W. Lovin, *An Introduction to Christian Ethics: Goals, Duties, and Virtues* (Nashville: Abingdon Press, 2011), 234–236.
[46] Reinhold Niebuhr, *The Essential Reinhold Niebuhr: Selected Essays and Addresses*, edited and introduced by Robert MacAfee Brown (New Haven, CT: Yale University Press, 1986), 113.
[47] By learning in public, I mean being willing to learn collaboratively and being willing to make mistakes.

narratives. Indeed, Jewish and Christian congregations and religious organizations may have a different understanding of hope due to how it is represented in the biblical texts. In Hebrew, *hope* is not a wish, it is "waiting for" (*yakal*) or expectation (*qavah*), or waiting with a sense of anticipation. Hence, rather than wishing for a new creation characterized by peace and justice, Christian faith communities wait in expectation that a new creation is to come, as promised.

Further, congregations may be more comfort with complexity, uncertainty and even mystery. Many congregations have a willingness to wrestle with ultimate questions (what Tillich calls "question of ultimate concern."). Also, they are able to think collectively, and are effective in creating consensus. Congregations tend to have a transcendent vision of what is more than just "me and mine," that is they look beyond their immediate struggles and times.[48] Congregations may value non-transactional relationships more than other institutions, such as businesses or governments, and also be more comfortable with the idea of sacrifice as an act of love rather than abstinence or deprivation. However, shortcomings of congregations and religious organizations are that many religious communities, even denominations and theologies, have become comfortable with power and wealth. Additionally, there is a long-standing tradition of anti-intellectualism in some quarters and an anti-scientific bias. Lastly, a focus on soteriology and eschatology to the detriment of the suffering that is happening now, and the greater suffering that will occur in the future.

In summation, while not all congregations and religious organizations are as well resources as others, or exhibit all of the strengths and gifts that I've described above equally, as compared to similar social groups, they are more likely to have key characteristics of

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[48] Max Oelschlaeger, *Care for Creation: An Ecumenical Approach to the Environmental Crisis* (New Haven, CT: Yale University Press, 1994), 12–15, 40–41, 49; and Anna Peterson, *Being Human*, 6.

communities that make lasting social change. Techno-sociologist Zeynep Tufekci states that key elements in successful social movements are: they able to think together collectively; they are able to develop a bold vision and take strong position on their issue; they create consensus within and without; and they are able to be strategic, can figure out political steps and leverage political/social power.[49]

Conclusion

In this chapter, I have reviewed the context of ecotheology so that the reader may understand the diversity and somewhat fragmented landscape into which water-focused ecotheology is emerging. I have introduced Kearns's typology as a means of understanding the broad scope of ecotheology, and to discern the theological, sociological, and epistemological constructs embedded within their ecological assertions and commitments. I have also discussed where water-focused ecotheology fits within the larger field. I also introduce the work of culture as toolkit theory and social practice theory, and explain that an understanding of social change that is based in older ideas of "ends" is inadequate. To more effectively understand and then make change, ecotheological Christian communities must see that change is shaped and constrained by meaning in a recursive process. Lastly, I have discussed the distinct strengths and skills of ecotheological Christians that make them well-suited advocates for water protection, conservation, and restoration. Having discuss the context into which water-focused ecotheology is emerging and how social practice theory more accurately accounts for how social change might be influenced by culture, I will move to a discussion in the next chapter of Christian communities engaging in water-focused ecotheology, and therefore participating in education, advocacy, and direct conservation, preservation or restoration projects.

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[49] Zeynep Tufekci, *Twitter and Teargas* (Yale University Press, 2017), 115–130.

Chapter Four: Communities Engaged in Water-focused Ecotheology

I believe it is especially useful to talk about water in terms of theology. Theology is exactly the human discipline that brings questions of value and the possibility of sacredness into conversation with more mundane parts of our lives. Further, theology engages the intellect in the exploration of meaning and value. Its goal, at its best, is to give an account of what is in us, to make us more intelligible to ourselves and to others, precisely on the subjects that are hardest to talk about, that is, what people value.

— Martha Franks[1]

Introduction

Having examined in chapter three the varied, complex context into which water-focused ecotheology and advocacy are emerging and that there is a need for better theories of social change that may more accurately predict what responses lead to transformation of water practices, the next task is to discuss communities engaged in water-focused ecotheology. For several years, I had hypothesized that a branch of water-focused ecotheology would emerge as water was such an important yet overlooked ecological issue. In addition, I had thought that congregations and religious environmental movement organizations (REMOs) would have distinctive contributions to offer in addressing water problems. As I stated in chapter three, I agreed with scholars such as Walter Rauschenbusch, Lynn White, Jr., and John B. Cobb, Jr. who saw that "the hydraulic force of religion" was especially relevant to environmental issues, and that religious communities had distinctive contributions to make.2 Yet, it was Martha Franks, an attorney with a specialty in water law in the Southwestern United States, who made clear to me one of the most important contributions that theological reflection could give to water-focused environmental work. Franks's words, with which I began this chapter, express well the tension

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[1] Martha C. Franks, "Water, Theology, and the New Mexico Water Code," *National Resources Journal* 48 (2008), 229

[2] Walter Rauschenbusch, *Christianity and the Social Crisis* (Louisville, KY: Westminster/John Knox Press, 1991), 6.

for water-focused ecotheologies and also for REMOs. It is the intersection of the mundane and the possibility of sacredness that is perhaps the most difficult gap to bridge. Franks words speak to the core difficulty for REMOs: how do we explore the meaning and value of what is simultaneously taken-for-granted and sine qua non, and what has been constructed as humble and ordinary but is nothing of the sort. Addressing water problems is especially difficult in contemporary Euro-western culture where we are allergic to complexity and uncertainty.

Alongside Rauschenbusch's faith in the transformational power of religious communities, and Franks affirmation of the usefulness of theology to water problems, I have also juxtaposed Walter Brueggemann's contention that one of the central tasks of the prophet is a radical criticism and dismantling of the explanatory schemes of the dominant culture.[3] In the biblical tradition, the prophets looked at the world from a different angle, and therefore they were able to see what their community could not. Thus, prophets are able to say that the reality of world is not accounted for by the explanatory schemes of the dominant culture, and by doing so, the prophets begin to dismantle the power structures that make and sustain the explanatory schemes. Social constructions can be explanatory schemes, especially when they are constructs that we think with. From reading the literature in the fields of ecotheology, environmental history, environmental philosophy, and political ecology, I was aware that the social construction of nature was problematic yet few outside the academy were conscious of it. Therefore, I anticipated that members of water-focused communities might be hampered by the nature that they think with. However, I had not understood that social constructions of human nature were connected both to how nature was constructed and how social change was theorized. Reading the

[3] Walter Brueggemann, *The Prophetic Imagination*, 2nd edition (Minneapolis: Fortress Press, 2001), 9–14. This is an assertation that Brueggemann has made in many other texts, lectures, interviews, and sermons.

work of Laurel Kearns, Anna Peterson, and Kate Soper, among others, put me on the path to better understanding that how ecotheology and REMOs understand social movements and social transformation needed to be addressed. Lastly, not surprisingly, I underestimated the complexity of water, and how dominant the material, asocial constructions of water are. Therefore, like the prophets of the biblical tradition, the water scholars identifying that the water that we think with is not water is a disruptive act that initiates reconstruction of water constructs. Having researched widely, I am all the more aware of the difficult of bridging the gap between what Brueggemann calls the explanatory schemes, ecotheology calls worldviews, and others call social constructions, and the awareness of them in the secular or religious environmental movements.

As I have previously stated, a central task of ecotheology is to make visible and intelligible what we do not see but which governs how we think and shapes our everyday practices. As such, I have looked back to assess the field of REMOs in light of my understanding of the water literature, political ecology and environmental ethics, and theories of social change. I have looked at many communities who have taken on water education, advocacy, and direct conservation, preservation or restoration projects as part of their religious praxis. This chapter discusses some of my findings. My intention is not to offer criticism or praise of any particular community but rather by contrasting them with each other, and with insights from water studies as well as my model of reimagining water, to identify more paths forward for them to become a "hydraulic force" for conservation, preservation or restoration of water. My findings were that REMOs do have distinctive contribution. However, there is a limited awareness of that their models of social change are contested. A related problem is that they are unaware that the understanding of human nature that their social change model is premised upon is a construct.

Additionally, they have a limited awareness of the social construction of nature, water, and water-human relations.

This chapter is organized into three sections. In the first section, I discuss the wide variety of religious communities participating in water-focused environmental reflection and activism, and therefore engaged in education, advocacy, and direct conservation, preservation or restoration projects. Things that I will distinguish about water-focused Christian communities are: institutional ties to other religious communities and to the secular world, institutional depth, leadership role (grassroots versus grass-tops), and spheres of engagement (local, national, international). In my discussion, I will use the categories of Lauren Kearns's typology, which I discussed in the previous chapter. Kearns's typology is triple-axis analytic tool for examining religious environmental movement organizations (REMOs) from the perspective of theology, sociology, and epistemology. However, I will amend Kearns's typology in light of the literature from water studies and practice theory. In the second section, I examine how water-focused REMOs understand and articulate water, and how this reveals a gap between how they understand water materially and theologically. In the third section, I will examine two communities in detail: WaterSpirit and Interfaith Partnership for the Chesapeake (IPC). I have picked them because they are most representative of the religious communities that have been working on water in the past decade. WaterSpirit is a small, grassroots REMO, and IPC is a hybrid of grassroots and grass-tops REMO. Again, I will use an amended form of Kearns's typology in my discussion. My purpose is to bring attention to the variety of approaches among water-focused ecotheology and REMOs, and to patterns that have emerged. However, I will also introduce three categories of my own, which examine the community's prevailing primary and secondary constructs of water and their constructs of water-human relations. Thus, I offer a triple

axis examination of water-focused REMOs. My purpose in this examination is to make visible and decodable what the two community's social constructions of water and water-human relations are.

The Varieties of Experience—Water-focused Ecotheological Christians

In 2004, I was introduced to members of the Pilgrim Place retirement community, and their innovative water conservation project.[4] The project leaders told me that the project had emerged as a small group of residents, called the Environmental Working Group, had become interested in ecotheology. They had been inspired to mount an ecotheological conservation project by their fellow resident and pioneer in ecotheology, John B. Cobb. They asked Cobb to give a lecture to their group. During this event, a particular statement of his galvanized them, which was: "Very few communities and institutions consciously shape themselves for the benefit of the earth. Yet many of the changes that are needed can only be made by collective action based on shared reflection."[5] Cobb was speaking to the quite strengths of that are often found among congregations and REMOs that I discussed in chapter three. While small, the Pilgrim Place Environmental Working Group possessed institutional depth and convocational skills. The Environmental Working Group determined that their Christian faith and their commitment to environmental stewardship meant taking direct action. With Cobb's encouragement, the community resolved to launch a community-wide project that would be a significant contribution, as both an end in itself as well as being a model for local community members in Claremont and even Southern California. The group asked itself what were the most important

[4] Pilgrim Place is a small retirement community for former missionaries, church administrators, professors, and pastors located in Claremont, California. Residents are predominantly, but not exclusively, mainline Protestant and most would identify themselves as being Eco-Justice oriented.

[5] John B. Cobb, Jr., "Ecology/Concerns: Becoming a Part of the Solution," (Lecture, cPilgrim Place, Claremont, CA, February 28, 2001).

local ecological problems that their community could work collectively to mitigate or reverse, and they determined that freshwater shortages and pollution were acute local problems. In addition, the small group learned that the Pilgrim Place campus, which consisted primarily of small, older bungalow homes located on a thirty-four-acre campus, had indoor and outdoor plumbing that was water-intensive.[6]

Thus, the community challenged itself to an ambitious conservation project: to reduce the community's water consumption. As they learned about the freshwater shortages around the globe and other water crises, they felt that their habits of consumptive water use were no longer compatible their long-held value of the natural world and their emerging understanding of ecotheology. The primary goal of their conservation project was to better care for "the water that was a part of God's creation." Hence, Pilgrim Place challenged itself to lower the community's water consumption by fifty percent within five years, and they reached their goal within four years. What is remarkable from the perspective of water-focused ecotheology is that Pilgrim Place had initiated the project as a way to live out their ecotheology through questioning and revising their water practices, and therefore shifted their role in the larger community from being water consumers to water conservers. Pilgrim Place changed how they understood water-use practices. Their experience of the flows of water through their homes had been dematerialized, deracinated and disenchanted. The water that they so appreciated as God's good gift had been transfigured when it entered their dwellings, and had become a non-salient, presumed function of the homes being connected to the built water system. They reconnected the water that flowed

[6] Many of the bungalows had five-gallon water tanks, rather than the (then) standard of three and a half (3.5) gallons required by the building code. A majority of the homes and common buildings had irrigation systems that were on timers. However, residents with irrigation systems on timers tended to water their garden and lawn during the day, which led to water loss from evaporation.

from their taps with the upstream rivers and snowmelt of their larger water system, which they were well aware of as being imperiled. They also recognized the connections between the built water system and water as one of the elements of God's creation and therefore that water should be conserved and protected through stewardship and conservation.

After learning about Pilgrim Place's water conservation project and changed understanding of water, I began to wonder if a more specialized form of ecotheology might emerge. I hypothesized that it was highly likely because I knew that water shortages, pollution, and economic access to water were increasingly problems in the Southwestern and southern United States as well as globally. In addition, water is a central symbol of Christian life.[7] The Hebrew Bible is full of references to the arid landscape of the Ancient Near East, and freshwater is a symbol of God's love and grace. The biblical authors are well aware that, unlike the Egyptians who could depend upon the reliable floods of the Nile, the Israelites were absolutely dependent on the gift of rainwater and the scarce freshwater springs. It is perhaps due to the unreliable nature of the region's water that water became a symbol of the covenant between God and Israel. In the New Testament, water is a symbol of new life (baptism) and of eternal life (living water). Further, I was aware that grassroots community organizations, like congregations, are often where ecological conservation and restoration begins. Physical projects, like watershed restoration or urban stormwater management, are more than individuals can take on but such projects are within the reach of congregations.

[7] Sean McDonagh, *Dying for Water* (Dublin, Veritas Publications, 2003), 13.

IN THE ACADEMY

I began to look for other Christian leaders and communities who were focusing on water within the context of ecotheology, and discovered several.[8] Being a theologian, I first looked to theologians but found few. In 2003, Sean McDonagh wrote *Dying for Water* in which he argued that responding to the world's water crisis must been seen as central to the Christian pastoral mission. McDonagh asserted that "Working to protect water and make sure that it is available freely to every on the planet is following in the way of Jesus in our world today."[9] In 2007, Gary Chamberlain wrote *Troubled Waters*, which focused on major religions and their ethical responses to the emerging water crisis. In 2008, an edited volume, *Deep Blue: Critical Reflections on Nature, Religion and Water,* was published; its authors, which I am one of, explored the many intersections of water and religion, yet the volume does not offer much material on praxis.[10] In 2013, Richard Hughes wrote *Religion, Law, and the Present Water Crisis*, which explores water as a religious symbol and asserts a right to water based on the legal and philosophical tradition of human rights. In 2015, Christiana Peppard wrote *Just Water*, which is a response grounded in Christian Ethics and Catholic Social Teaching.

DENOMINATIONS AND PARA-CHURCH ORGANIZATIONS

At the same time, I looked to denominational leadership, ecumenical organizations, and para-church organizations. One of the first voices on water and ecotheology was Ecumenical Patriarch Bartholomew, the head of the Eastern Orthodox Church and therefore the spiritual

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[8] I have exclude many faith-based water initiatives from my definition of water-focused ecotheology. For example, H_2O for Life, Healing Waters International, Living Water International, The Water Project, Water to Thrive, and The Last Well. These organizations are primarily organized to bring freshwater supply and water sanitation systems to underdeveloped, primarily rural communities. These organizations are focused on human well-being rather than on addressing water as an ecological or eco-justice issue.

[9] McDonagh, *Dying for Water*,102.

[10] Sylvie Shaw and Andrew Francis, *Deep Blue: Critical Reflections on Nature, Religion and Water* (Routledge, 2008).

leader of 300 million Orthodox Christians worldwide.[11] In 1995, the Patriarch Bartholomew hosted a theological symposium on "Revelation and the Environment." In 1997, for the second symposium, and for each of the six subsequent symposia, the Patriarch took as the theme a body of water and its most pressing ecological aspects.[12] Other Christian leadership bodies also advocated for the importance of protection of waterscapes as a spiritual practice.[13] In 2001, the Catholic bishops of the Pacific Northwest issued a pastoral letter on the Columbia River, asking communities to care for the 1,200–mile waterway. The bishops cited Scripture passages in which humans are called to be caretakers of the Earth. In 2005–2006, the World Council of Churches formed the Ecumenical Water Network in order to educate and advocate for water protection, restoration, and conservation from an ecotheological stance.[14]

Also in 2006, the United Church of Christ (USA) produced the documentary film "Troubled Waters," which was hosted by Lynn Redgrave and was broadcast by the ABC network in major US cities. "Troubled Waters" explores the critical issues of water shortage through the lens of faith and from the perspective of people in Bolivia, Malawi, the Middle east and the United States who struggle daily to find access to clean, safe water. The United Church of Christ partnered with the National Council of Churches to produce the documentary.

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[11] There were other voices, such as in 1988, the National Council of Churches releases statement during Louisiana Toxics March, saying clean water is a gift from God. However, the Patriarch has sustained a focus on water for over two decades.

[12] The topics of the symposia have been: "Revelation and the Environment," 1995; the Black Sea, 1997; the Danube River (1999); the Adriatic Sea (2002); the Baltic Sea (2003); the Amazon (2006), the Arctic (2007), and the Mississippi River (2009).

[13] Patriarch Bartholomew has continued his work, through subsequent symposia and writing, and represents one of the strongest voices in water-focused ecotheology.

[14] Susan Kimand Maike Gorsboth, eds. *Ripples in the Water: Success Stories of Churches Striving for Water Justice* (Geneva, Switzerland: World Council of Churches Publications, 2015).

CONGREGATIONS

Similarly, I looked for congregations working on water and ecotheology. I took to heart ecotheologian and ethicists Anna Peterson's statement, "Studies show the efforts at social change are most likely to succeed when they are rooted in already existing networks such as neighborhoods, workplaces, schools, or religious congregations *and* when they make explicit the connections between local problems and larger structures."[15] After 2005, I saw more congregations giving attention to water issues, possible galvanized by growing media coverage of water issues or perhaps due to well covered water issues. Another burst of activism came around 2010, when natural gas fracking in the Appalachian region became wide-spread.[16] By 2011, the news media was reporting on the impacts to the watershed and a crisis for many people's drinking water. However, it may have also been that some of the increasing water-advocacy may have evolved from secular environmental groups.[17] Certainly, regional droughts, such as the 2011–2017 California drought, raised awareness of water issues. Many congregations began learning about increasing water shortages on the local, regional, and global scale. Some congregations began to include messages of respect and conservation for water during worship, and some congregations began to speak of water stewardship alongside other ecotheological concerns, such as climate change, habitat restoration, green buildings, farm and food, and environmental health. Some congregations undertook programs to conserve freshwater, or to protect and restore waterscapes. In 1996, St. Andrew's Presbyterian (Portland, OR) initiated a creek restoration project for the stream that runs along their property, which is a tributary of the

[15] Anna L. Peterson, *Everyday Ethics and Social Change*, 10.
[16] The Marcellus Shale deposit was discovered in 2004. Hydrofracking drilling is a common technique used to extract natural gas trapped within the shale.
[17] Michael Fincham, "The Third Wave: The Environmental Movement Reaches the Chesapeake," *Chesapeake Quarterly*, October 2016, www.chesapeakequarterly.net/V15N3/main2/.

Fanno Creek system.[18] In 2003, St. Andrew's Presbyterian formed a partnership with the City of Portland, Oregon and partnered with Portland Bureau of Environmental Services and the city of Portland to retrofit the church's 65,000 square foot parking lot to better manage stormwater runoff. In 2000, led by members of St. Mark's Cathedral, ten Seattle area congregations participated in a salmon habitat restoration project at a superfund site on the Duwamish River.[19] In 2004, St. Philip Neri Parish (Portland, OR) also initiated a parking lot stormwater retrofit program. In addition, First Presbyterian Church (Kirkwood, MO) held cleanups of stormwater creeks, beautifying the waters, improving wildlife habitat, and promoting public health.[20] The Catholic Diocese of Houma-Thibodaux, Louisiana has worked to prevent erosion of fertile wetlands and loss of marine livelihood to over-development.[21] Some Catholic communities of men and women religious took on larger scale education and advocacy work, such as WaterSpirit (1998).

COALITIONS OF CONGREGATIONS AND REMOS

In addition, congregations in many faiths organized coalitions and REMOs to protect and advocate for water. Examples include EarthMinistry (1992), Religious Along the River (ROAR) (1996), and Religious on Water (ROW) (1999).[22] In 2003, National Catholic Rural Life (NCRLC) had a conference on water.[23] In 2006, the Chesapeake Covenant Congregations founded in Annapolis, based on the work of two congregations, which was reorganized in 2010

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[18] Interfaith Network for Environmental Concerns—Ecumenical Ministries of Oregon, "Congregations Caring for Watersheds and Wildlife Case Study: St. Andrew's Presbyterian," June 2011. Downloaded August 28, 2012.
[19] The Duwamish River is the name of the lower twelve miles of Washington state's Green River. Much of its watercourse is now heavily industrialized, and its final five miles has been a superfund site since the 1970s.
[20] "Stream Clean-up Report," *Kirkwood Pres* (Newsletter of First Presbyterian, Kirkwood, MO) XXVII, no. 6 (June 2008), www.kirkwoodpres.org.
[21] "Stewardship Stories," Nation Religious Partnership for the Environment, accessed December 16, 2014, http://www.nrpe.org/stewardship-stories.html.
[22] "History | Earth Ministry," Earth Ministry website, October 10, 2019, https://earthministry.org/about/mission-and-history/.
[23] "History–Catholic Rural Life," Catholic Rural Life, April 2020, www.catholicrurallife.org/about/history/.

as the Interfaith Partners for the Chesapeake.[24] In 2008, the Sisters of the Holy Name of Jesus and Mary announce a corporate stance on water, which opposes bottled water.[25] In 2012, the Washington City Church of the Brethren (Washington, DC) installed a 650 gallon cistern to capture rainwater runoff, which protects local rivers from pollution and reduces irrigation water use.[26] Other congregations, such as Capitol Hill United Methodist Church (Washington, DC) and Metropolitan Memorial United Methodist Church (Washington, DC), partnered with Anacostia RiverKeeper, which is a local branch of the secular environmental movement organization RiverKeeper, to take on many similar watershed protection projects. In 2016, Trinity Wall Street (New York, NY) in partnership with three other Anglican cathedral-churches organized global partnership and Trinity Wall Street hosted conference.[27]

Overview of the Engagement of Water-Focused Christian Communities

By 2012, it was clear that a great variety of water-focused congregations and REMOs, as well as coalitions of each, were emerging.[28] In contrasting the literature of water scholars with the literature of REMOs (some self-reporting and some reporting by media outlets), I recognized that the communities were clearly strong in convocational skills and many had strong intuitional advantages, such as media attention to be an unexpected validator of environmental values. However, I also noticed that there were divergences between how they spoke of water ecologically and theologically, which was true of how they spoke of nature as well. Ecologically,

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[24] Fincham, "The Third Wave," *Chesapeake Quarterly*, October 2016, www.chesapeakequarterly.net/V15N3/main2/.
[25] "Corporate Stands | Sisters of the Holy Names," Sisters of the Holy Names of Jesus and Mary, U.S.-Ontario Province website, August 16, 2012, www.snjmusontario.org/what-we-do/justice/corporate-stands/.
[26] Dottie Yunger, "'Rev. Riverkeeper': One Minister's Effort to Keep the Anacostia River 'Baptizable,'" *Sojourners*, November 2013.
[27] "TI2017 Home | Trinity Church," Trinity Institute (Trinity Church Wall Street) website, May 25, 2017, www.trinitywallstreet.org/trinity-institute/2017/home. This conference website has video clips of several of the presentations and lectures of Trinity Institute's Water Justice conference. As of April 10, 2020, the video clips remain available.
[28] Derek Simon, "Vulnerable Waters, Anti-fracking Solidarities, and Blue Theologies: Toward a New Brunswick Case Study Between the Global and the Local," *Journal of New Brunswick Studies*, 7, no. 2 (2016): 99.

water was described as material object that was both a public and humanitarian good but, theologically, water was described as a scared gift or as being sacred itself. In addition, many of what Kearns calls "Proscribed Responses" that were identified by members of water-focused communities focused on technoscientific approaches, ends-based behavioral change approaches, or public education campaigns. This signified to me that the understanding of social change in the communities was based in conventional models of social change. I came to wonder what theological discernments and sociological understandings might hamper REMOs most and what might most help them. I realized that using Kearns's typology to analyze the theological, sociological, and epistemological constructs of the communities would better reveal how congregations and REMOs understood water as a material and spiritual entity, and how such understandings were connected with their prescribed response to water problems.

How Do Water-Focused REMOs Understand and Articulate Water

The dynamic between academic ecotheology and the spiritual practice and activism of people in the pews can be difficult in the sense of how much do they influence each other. In reading ecotheological texts, I have wondered how much of it "makes it out of the academy." I have been pleased to find that in the past five years more and more people I speak with in religious communities are familiar with ecotheology, and the conversations are becoming more theologically sophisticated. Yet, in most religious communities there is abiding tension between the spiritual and the practical, both for the fiscal realities of many congregations and religious organizations and also within the lives of religious individuals. In many congregations, hard realities of modern life seem to leave little room for environmental activism or greener living. Nevertheless, ecotheology is part of the tradition of practical theology, and therefore should be a dialog partner with lived theological praxis.

Below, I will briefly discuss three characteristics that I recognize as common among water-focused REMOs. They are: primary sense of water, spiritual sense of water, and primary action for water-activism. For primary sense of water, I examined what sense the water-focused communities primarily assumed (what was their primary water construct). Most of the congregations and REMOs had a construct of water as a material and exogenous. This was true of the congregations working to protect streams, rivers, and oceans (material water) as much as those working on stormwater mitigation or conservation of urban water use. I have concluded that few congregations and REMOs distinguish between water as a material substance and a socio-natural substance, or even between urban water as freshwater that moves through a water system versus freshwater in rivers or saltwater in the oceans.[29] The second category of the spiritual construct of water is likewise nebulous. Some congregations had clearly discerned their theological position that water had a spiritual value and could even point to scriptural sources that explicitly described water as a divine give or as blessed by God. Yet when asked if tapwater, irrigation water, saltwater, or wastewater was sacred, difficult arose.[30] Most often, the idea of water as a material object was named as sacred or a sacred gift but the congregations and REMOs had not challenged themselves to go past the broadest conceptual sense of water. As with the larger population, an understanding of water as more than a material substance is unusual but emerging. The third category is equally interesting as most of the congregations and REMOs, while advocating for specific forms of water, were ambiguous in how they understood

[29] I discussed the term *socio-natural,* in chapters one and two. Socio-natural denotes how nature and culture are interrelated, and therefore analysis of one should not occur without taking the other into serious consideration. Put another way, water is socio-natural because water and culture each make and are remade by the other. Some water scholars prefer the term *hydrosocial*.

[30] This point is based on interviews with individuals who were leaders of congregations and religious organizations, who also relayed what they believed to be the consensus belief of their communities.

the relation between water and humanity. When water was identified as a river, wetland, aquifer, lake, or ocean, the relationship was that of a subject to a subject, and water understood as having intrinsic value. When water was identified as tapwater, irrigation water, saltwater, or wastewater, the relationship was that of subject-object, and water was understood as having instrumental value or no value. Examining the primary sense of water in comparison to the community's "Image of Nature" (social construction of nature) was equally interesting. The leaders or community members of the water-focused Christian communities that I spoke with reported similar constructions of nature. Interestingly, many were quicker to say that nature was sacred that were prepared to say that water was sacred. Likewise, they reported similar social constructions of the relationship between nature and humanity. As the number of water-focused congregations and REMOs that I was able to interview was small, I cannot at this time draw more than cursory conclusions. My intention in detailing the above is to account for patters that I saw between 2011 and 2015, and is one of the primary reasons that I turned to the literature of political ecology and water studies to better understand how water is socially constructed and what the connections between social constructions and everyday practices are.

As may be seen in this overview of the water-focused communities, there is a variety of organization, program focus, prescribed response, social construction of water and nature, and water-human relations. Some communities initiate water projects as part of a larger ecological vision, while others chose to focus exclusive on water protection and conservation. From surveying a wide range of water-focused ecotheological communities, it becomes evident that some communities dive into water deeply, and in doing so, they bring about new understandings of the intersections of water, ecology, and faith. However, while I initially hypothesized that what might emerge was a new branch of ecotheology, I would hesitate to do so now. This is for

several reasons. First, I would affirmatively state that what has emerged within religious environmental communities focused on water is distinct from the advocacy that has existed in secular ecological communities advocate, and, as I will discuss in the next section, REMOs are not simply a faith-based version of the secular water-focused environmental moment. However, there is a gap between a community being conscious of water issues and begin water aware or literature, which is to a sense of water as more than material and being able to decode the dominate social constructions of water as utilitarian or aesthetically pleasing material object. Many communities make statements such as "water is justice," "water is a human right," or "water is sacred" but do not articular why, and perhaps cannot yet. Clearly, they have a sense of water as more than material but have not yet developed the "seeing or listening." To do so, they will need to create new methodological tools for analysis and reconstruction of the dominant Euro-western water constructs.

Discerning Water-focused Ecotheology

In his book *To Care for Creation*, Stephen Ellingson argues that REMOs are distinct from secular environmental organizations because REMOs aver that faith and environmentalism are compatible, and moreover REMOs exhort people of faith to bring environmental activism into the center of their religious life. Ellingson writes, "REMOs aim to persuade their regions audiences that they can only be fully and authentically religious if they integrate environmentalism into the very fabric of their religious lives."[31] This is an important distinction for all religions individuals who are engaged in ecological activism, as well as for water-focused ecotheological Christians. In 2006 and 2008, I interview Paul Christensen and Dean Freudenberger, the leaders of the Pilgrim Place water conservation project. I asked them if the

[31] Stephen Ellingson, *To Care for Creation: The Emergence of the Religious Environmental Movement* (Chicago: University of Chicago Press, 2016), 153.

project represented a new turn in ecotheology. They answered yes and no. For some Pilgrim Place residents, the project was an expression of their deeply held ecotheology but for others it was an opportunity to practice ecological work that happened to take place on the campus of a religious community. I also asked Christensen and Freudenberger if any of the Pilgrims thought of the water that the project was conserving as sacred or holy. (I will return to consider this question myself in chapter seven.) They answered tentatively that some residents might, but that more Pilgrim Place residents described water as a natural resource or as a *sine qua non* part of God's creation. In 2007, I asked Suzanne Golas, founder and director of WaterSpirit if the women religious of her congregation believe water was sacred. Golas replied, "We absolutely find water sacred and include components on the sacredness of this gift in all our programs."[32] I have stayed attuned to this difference in how water is named, and the place that ecological care for water has within the religious practices of congregations and REMOs. I think that it is a defining difference between ecological activism, water-focused ecotheological activism, and what I have termed water-focused ecotheology.

Water-focused ecotheology is a commitment to water informed by water awareness and literacy, and provide a counterpoint to conventional constructions (water as more than material and understanding that water-practices are constrained and enabled by culturally encoded meanings), an-d an engaged practice of protection and restoration, all of which are brought into the center of religious life. Water-focused ecotheology is more than conserving, protecting, or restoring waterscapes or anthropogenic water systems motivated by an ecotheological perspective. To engage in water-focused ecotheology necessitates understanding water and nature in non-dualistic ways. They will also need to understand humanity differently, so that

[32] Personal correspondence with Susan Golas, CSJP, on April 16, 2007.

humanity is a part of creation not alien to it. Water-focused ecotheology also demands new methodological tools (some implicit and some explicit), such as water awareness and literacy and better models for social transformation. Similarly, Water-focused ecotheology necessitates understanding social processes differently

THE MINISTRY OF WATERSPIRIT

WaterSpirit is a non-profit organization in New Jersey that is run by the Congregation of the Sisters of St. Joseph of Peace (CSJP) and considered to be a part of their mission. An international, Catholic religious order, the CSJP has long committed itself to working for peace through social justice. The Sisters see themselves as having a special relationship to water, due to many of their religious living on or near bodies of water, such as Lake Washington, Bellevue, WA and the shores of the Atlantic Ocean in Elberon, New Jersey.[33] In 2002, during an assembly of the entire congregation of the order called "Living Water," the Sisters produced a covenant document that affirms their commitment to focus specially on water: "As peacemakers, we value Earth as our teacher. In our ongoing efforts for the environment, we identify our entry point as the ethics, economics and politics of water. Focus on water leads us to concern for land and air as well. We commit ourselves to prayer, education, direct action and advocacy on behalf of water."[34]

Organized in 1997, WaterSpirit grew out of the emerging environmental consciousness of the Sisters. WaterSpirit has offices at the retreat center of the CSJP order, which is called Stella Maris. WaterSpirit is an organization dedicated to the belief that water is a special part of God's creation and needs protection from pollution and over-exploitation. Indeed, water is more than a gift from God, it is sacred. For the Sisters, protecting and restoring waterscapes—through their

[33] Personal correspondence with Suzanne Golas, CSJP, on April 16, 2007.
[34] Suzanne Golas, CSJP, "Living Water," *WaterSpirit* 1, no. 3 (December 2002): 2.

ministry of education, advocacy and ritual celebration—is a theological act. WaterSpirit has two primary activities: education and ritual celebration. Education is mainly done through workshops to school groups, environmental groups, civic and church groups, and senior citizen groups that integrate educational programming with prayer, reflection, and ritual. The staff has worked to create programming that endeavors to create a sense of relatedness to "the sacredness of creation" while at the same time responding to the current ecological challenges, especially those of water. In addition, the community has several public celebrations throughout the year that mark the changing seasons, as well as to celebrate events in the ecclesial calendar. The celebrations are intended to contemplate the commitment to the mission of education and conservation, and to revitalize participants' commitment to being aware of water as sacred and precious. WaterSpirit directs its education programming towards lay people and K-12 school groups. A secondary activity is advocacy for water conservation, protection, and education at the United Nations in New York, New York.

WaterSpirit possesses many of the qualities, described in chapter three, that can make ecotheological religious communities a hydraulic force for change. WaterSpirit is a highly collaborative and persistent organization, and they willing to work towards solving complex problems, and facing very difficult moral questions. The community grounds itself in sacred texts as they focus on deep ontological questions. They have a different sense of hope, because there is the world as it is but there is also the world as it could be. WaterSpirit is a community that is comfortable with the idea of sacrifice as an act of love rather than abstinence or deprivation. In addition, they have strong institutional advantages and convocational skills. One unusual intuitional strength is the connection to the international network of sisters in their order,

in addition to the larger network of women religious, and to the even larger and very influential leadership of the Roman Catholic church.

WaterSpirit focus is on the integrity of the oceans, but also on rivers and wetlands. Hence, they examine/critique pollution to water bodies from domestic, agriculture, and industrial sources. WaterSpirit also teaches concern for bodies of water and for access to freshwater supplies, by which they mean reliable built water systems, with concern for women and the poor. WaterSpirit articulates a clear understanding of water as sacred, and seeks to connect caring for water as part of the larger call to stewardship that is the responsibility of all Christians. WaterSpirit's image of God, image of nature and theological anthropology intersect with one another, as well as their social constructs of water. Thus, their primary sense of water is that water is a material, natural substance and their secondary sense of water is that water is sacred. Thus, while they are clear that water conservation and protection are social justice issue, as well as a woman's issue and a human rights issue, their social construction of water is still conventional as it is grounded in water as material and exogenous. WaterSpirit has been a leader in terms of prophetic lament, with particular attention to oceans and shorelines. WaterSpirit understand water to be more than material, and has clearly worked on understanding water many symbolic meanings. WaterSpirit has reconstructed water as sacred and as being part of a sacred covenant with the Divine. However, WaterSpirit has not examined the water-human systematically, and therefore their lament and their reconstructed water are limited.[35] In addition,

[35] My analysis is not meant to mean that WaterSpirit is lacking nor to imply that their work has been insignificant. WaterSpirit, and its "mother" organizations, the Sisters of St. Joseph of Peace, feel a special connection to the waters and the shoreline of the Atlantic, and their focus on oceans and shorelines is appropriate. Their work has been pioneering, and has influenced many to bring ecological consciousness, and a consciousness of water issues, into their religious praxis.

WaterSpirit has a conventional understanding of social change, which may be an important limitation on their activism.

THE MISSION OF INTERFAITH PARTNERSHIPS FOR THE CHESAPEAKE

Interfaith Partners for the Chesapeake (IPC) is faith-based nonprofit based in Annapolis, MD that has as its mission to educate and mobilize congregations in water conservation, protection, and restoration, as well as work as a lobbying organization to state and local governments for watershed issues. IPC functions as a prophetic voice to congregations that have yet to become engaged in ecotheology, whose engagement in ecotheological issues or water issues have been delayed due to limited resources or time and political or financial capacity. IPC began in 2004 as a local coalition of congregations focusing on water activism in an ecotheological context.[36] The organization was first largely Christian and had small successes that were limited to the Annapolis and Baltimore region of Maryland. In 2010, the coalition reorganized itself into a program-based REMO and legislative lobbying organization.[37] IPC sees itself as engaging faith communities in a stewardship of water, which is rooted in Judaism, Christianity, and Islam. IPC writes that it "envisions a time when faith communities throughout the Chesapeake region will have a deep appreciation of the sanctity of Earth and will care and advocate for it through their words and actions."[38]

A majority of IPC's work has been in recruiting, educating, and supporting congregations in direct participation water protection and restoration projects. IPC has worked with environmental as well as state and county governments to identify and recruit underrepresented

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[36] IPC was originally organized under the name Chesapeake Covenant Congregations.
[37] These included Alliance for Chesapeake Bay, Trout Unlimited, Baltimore Jewish Environmental Network, and the Eco-Justice Programs of the National Council of Churches (EJP-NCC). See also Fincham, "The Third Wave."
[38] Jodi Rose, "Interfaith Partners for the Chesapeake Anacostia Congregational Partners," (Annapolis, MD: Interfaith Partners for the Chesapeake, June 06, 2016), accessed September 22, 2017, p. 5 of 7. http://chesapeakebehaviorchange.org/.

congregations, such as small and minority congregations. IPC also partners with organizations like Watershed Stewards Academy and Maryland Sea Grant Extension Program to provide education to congregations about pollution that threatens the Chesapeake watershed as well as best practices to protect and restore the Bay and its many tributaries. IPC also provides start-up and ongoing support to congregations, in planning and implementation of direct participation projects, which includes finding financial partners or teaching congregations to secure funding from grants and other underwriters. In many ways, IPC serves as mobilizer, connector, and amplifier for water activism.

Some of the programs that IPC has led are the Covenantal Partners Program, the RiverWise Congregations, the Trees for Sacred Places, and the Blue Water Congregations. The Covenantal Partners Program partnered the city and county governments of Baltimore with six congregations that wanted to deepen their emerging ecological ministries. The program was intended as a learning model for future faith communities as well as for government agencies. Trees for Sacred Places is a program that partners with congregations to plant trees in order to filter pollution, prevent runoff, and improve water quality as well as more generally to reduce the carbon footprint of congregations and restore wildlife habitat. The RiverWise Congregations and the Blue Water Congregations projects are centered around redirecting stormwater runoff from impervious surfaces, like roofs and parking lots, towards rain gardens that allow water to percolate into the ground.

In many ways, IPC is similar to other faith organizations engaged in water activism, but has introduced some important innovations by functions as a hybrid of grassroots and grass-tops leadership. In its grassroots work, IPC is similar to many other faith-based environmental organizations, such as EarthMinistry and Interfaith Power and Light. They are an instigator of

many concrete water projects at the congregational level. By contrast, IPC works as a grass-tops organization in its work as an advocate at the state level. IPC provides important lobbying activity and is a significant disseminator of education materials to congregations large and small in all demonization.

IPC also possesses many of the qualities, described in chapter three, that can make ecotheological religious communities a hydraulic force for water conservation, protection, and restoration. IPC has shown that they are able to think collaborative. Also, they are able to develop a bold vision and take strong position on their issue, and they are able to be strategic, can figure out political steps and leverage political/social power. Additionally, they have a knack for creating consensus within and without. IPC has a different relationship to the future, meaning that they look beyond their immediate struggles and times to an alternate future. Lastly, they are often able to make space for "learning in public" and demonstrate that they value non-transactional relationships. However, in how they name their prescribed responses and structure their programing, IPC seems to hold a conventional understanding of social change. Their acceptance of models of change, such as the ABC or a value-belief-norm model, may hamper their ability to be more influential instigators of transforming water practices. Additionally, only a small handful of congregations that they have worked with have brought ecological concern for water, as Ellingson writes, "into the very fabric of their religious lives."[39]

For IPC, water is clearly a central, even paramount ecological issue. A great strength is the intuitional depth and their ability to convocational skills. While they follow a conventional understanding of social change, their leadership has made statements that make me think that

[39] Ellingson, *To Care for Creation*, 153.

they appreciate what the biblical texts tell us about human nature and social movements.[40] As I quoted in chapter one, Walter Brueggemann explains that, unlike contemporary culture, ancient prophets understood that social change happens more effectively through narrative evocation, poetry, and hope, rather than technological innovation and doctrine.[41] Work that remains for IPC is to more clearly understand that their social construction of water is still based in conventional constructions of water as homogenous, material object. IPC has as its focus the protection of the Chesapeake Bay watershed, and the larger goal of Creation Care. Further, IPC imagines water as a nexus of life, and as sacred. However, IPC understanding of water adheres to conventional constructions of water and water-nature relations, and the most dominant of these constructs restrict their ability to develop effective responses to the ecological crisis. They do have a sense of water having spiritual meanings but these are not well distinguished from ideas of water as a utilitarian good. In addition, they do have a robust water consciousness and expertise in water issues, but IPC's leadership has not yet systematically reimagined water as socio-natural or material-relational. In fairness, IPC's executive director, Jodi Rose communicated to me that IPC's must strike a careful balance theologically as an inter-faith organization.[42] More to the point, as many of the congregations IPC works with are small and have very little financial or leisure time, IPC's leadership is cautious in introducing what may be perceived as over-academic theological reflection. Hence, as with WaterSpirit, IPC has room to grow as water-focused ecotheology ecotheological organization, and in all likelihood will.

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[40] Yunger, "Rev. Riverkeeper"; *Living Questions*, "Faith-Inspired Environmentalism," produced by Rob Sivak, aired June 7, 2017, on WYPR (public radio station in Baltimore, MD). Host Tom Hall interviewed Jodi Rose, Emmalee Aman, and Rabbi Nina Cardin.
[41] Brueggemann, *Prophetic Imagination,* xiv.
[42] Personal correspondence with Jodi Rosin, executive director, IPC, on August 29, 2017.

Conclusion

In this chapter, I discussed organizations engaged in water-focused ecotheology. Additionally, I have examined the work of water-focused REMOs by using Kearns's typology, with additional categories to identify characteristics of water-focused REMOS, in order to analyze their theological, sociological, and epistemological constructs of water, nature, and water-human relations. Using the typology, I then discerned the attitudes and commitments of communities that are engaged in water conservation and protection projects. My intention was to better understand how communities that are engaged in water-focused work understand water as an environmental issue, as a circumscribed construct, and as water itself. I examined two communities in detail. While WaterSpirit and IPF represent a small portion of religious communities that are working to protect and conserve water as an expression of their religious principles, a close examination of their structure, leadership, social construction of social change, water, and water-human relations is informative. The power of such communities, especially to raise consciousness of environmental water issues and to be advocates for water conservation, is largely untapped and has enormously potential. Yet, it is important to understand what may hamper them in their work to transform everyday water practices at the individual, community, and regional levels.

As we have seen in this chapter, ecotheological concepts are inextricably linked to how communities engaged with ecotheology. In chapter one, I discussed how systemic, lasting changes to behaviors to will arise only when dominant/conventional constructs of water are identified and decoded, and then reconstructed. Having discussed Christian communities engaging in water-focused ecotheology, and therefore participating in education, advocacy, and direct conservation, preservation or restoration projects, I will now return to a discussion the social construction and how it is largely unseen and regnant. The next two chapters will examine

dominant constructs of nature and human nature, and will propose alternative constructs. These will intersect with the alternative constructs of water and counternarratives that I will offer in chapter seven.

Chapter Five: Nature Unbounded and Joyful

If we want to know what nature is and why we value it in the ways we do we must look not to nature itself but to our ideas about nature.

—Noel Castree, *Making Sense of Nature*[1]

Nature is as much present in city concrete as in a farmer's field.

—David Waschmuth, "Three Ecologies: Urban Metabolism and the Society-Nature Opposition"[2]

Introduction

Having discussed in chapter four how Christian communities are engaging in water-focused ecotheology, and therefore participating in education, advocacy, and conservation, preservation or restoration projects, I now turn to a discussion of how ecotheology and the larger religious environmental movement needs a critical evaluation and reconstruction of the dominant construction of nature in the West as material, asocial object. The dominant construction conceptually separates nature and humanity. The task of reconstructing how we understand and represent nature is part of the larger task of prophetic presentation of grief and hope that may reimagine an alternative to the destructive conventional worldviews and practices of western-industrialized countries.

However, before I turn to the discussion of the social construction of nature, I would like to return to a quote that I previously mentioned in my introduction, one that is from *Watership Down.* In the passage that I quoted, author Richard Adams is commenting on oddities of human perception and valuation. Adams points out two key qualities of human thought, which are that the act of conceptualization is both unconscious and reductive. Adams writes: "We are not conscious of daylight as that which displaces darkness. Daylight…seems to us simply the natural

[1] Noel Castree, *Making Sense of Nature* (London: Routledge, Taylor & Francis Group, 2014), 38.
[2] David Wachsmuth, "Three Ecologies: Urban Metabolism and the Society-Nature Opposition," *The Sociological Quarterly* 53, no. 4 (2012): 506–523, 506.

condition of the earth and air."[3] Adams words put into plain language what social constructionists and ecotheologians have agreed for many decades, which is that humanity unconsciously takes in the world, either directly through phenomenological stimuli or indirectly through cognitive processes. This process is so automatic that we rarely notice it, and—more to the point—we do not notice what our cognition fails to perceive or filters out as non-salient data. Further, human beings are constrained by the ideas and language that we are born into, and therefore all interactions with even the most everyday stimuli, such as daylight, are circumscribed because they have been encoded with multiple meanings. Human beings are in a perpetual cycle of perception, organization, reduction, meaning making, and encoding, which is transmitted through social structures. When the human brain experiences phenomena, it rapidly perceives it and then, using past experience, language, and knowledge, attempts to make sense of the phenomena as quickly as it can. Thus, understanding how we conceptualize the world of living and non-living things is indispensable to understanding how we have and are to live sustainably and ethically. Therefore, one of the most intractable problems human beings face is to be aware of our unconscious assumptions about reality and meaning, which has implications for religious environmentalism. What our unconscious mind has either filtered out or cannot see because it does not fit within our social constructions is often taken-for-granted, dangerously neglected, or discounted. As I have discussed previously, social constructions become so internal to our cognitive processes, we do not think about them but with them.

Ecotheology has sought to uncover previously unacknowledged and unconscious assumptions, and to make them visible so that they might be broken apart or reconstructed when they do not support living sustainably and ethically, or when they actively sanction exploitative

[3] Richard Adams, *Watership Down* (New York: Macmillan, 1974), 164.

practices. This is because ecotheology has long contended that how humanity conceptualizes nature and itself, and the relations between nature and humanity, are regulative of how humans engage with nature. Thus, how Euro-western culture conceptualizes nature—what has often been called the Western worldview of nature—is an important factor to address and to transform. A watershed for ecotheology was the publication in 1967 of "the Historical Roots of the Ecological Crisis" by medieval historian Lynn White, Jr. In his article, White connected the ecological destruction with what he called "Western views" of nature and nature-human relations, which he contended had risen from medieval Christian worldviews; he challenged religious thinkers and believers to understand the history of Euro-western worldviews of nature and revise them.

White's article offers water-focused ecotheology two things: (1) challenging us to notice that we think of nature in predictable, culturally constructed ways that in turn govern how we engage with nature, and (2) making plain that the most dominant of these constructs restrict our ability to find effective responses to the ecological crisis. White's article had several flaws, and thus it is not truly a discursive partner with ecotheologies or religious environmental movement organizations (REMOs) any longer.[4] Yet, it may still function as a rhetorical device, which is how I will employ it in this chapter and in chapter six. White's core challenge, the gauntlet that he threw down, was an exhortation for Christians to "rethink and re-feel" what nature was, as well as nature-human relations.[5] I agree and argue that, as water and much of abiotic nature are not even seen, and are not living beings, it is all the more important to look deeply at how we think about nature.

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[4] White's article has been criticized by many. The most detailed has been done by Elspeth Whitney in "Lynn White, Ecotheology, and History," *Environmental Ethics* 15, no. 2 (1993): 151–169.
[5] Lynn White, Jr., "The Historical Roots of Our Ecological Crisis," *Science* 155, no. 3767 (March 10, 1967): 1203–1207, 1207.

In addition, I have chosen White's essay for two other reason. The first is that, despite shortcomings of his article, White galvanized two or more generations of scholars and religious environmental activists.[6] Why was this? It was not merely that White made bold, attention grabbing statements. His article clearly touched a nerve and provoked many refutations and Christian apologetics. Yet, it also led to considerable examination and critique of the roles Christian doctrine and practice have played in establishing modern anti-ecological structures and practices. This is because White lamented, judged, and proclaimed hope for an alternative (a Franciscan alternative). Most of all, it is because White asked a vital question—rather than the immediate cause, what were the foundational, systemic causes of the ecological crisis? And his answer—that the origins were to be found obscured from view in our most taken-for-granted, anthropocentric ideas of nature and nature-human relations, ideas which were "cast in a matrix of Christian theology"—resonated profoundly.[7] The second reason that I have chosen White's essay as a rhetorical device is that White's starting point is a reconstruction of nature as opposed to human nature or humanity's role in God's creation. Many ecotheologians have focused on humanity or humanity's role. If a goal of theology is to challenge anthropocentrism and encourage theo-centrism or geo-centrism, then the starting point should be with analysis and reconstruction of nature.

Many ecotheologians have sought to challenge Euro-western anthropocentrism through an analysis, criticism, and reconstruction of worldviews. White contended that science and technology could not provide effective solutions to the eco-crisis as the origins of our current

[6] White's article has been widely criticized for a lack of sources for his central thesis, which was that the ultimate cause of the ecological crisis are the anthropocentric Christian views of nature and humanity's divinely anointed dominion over it.
[7] White, "Historical Roots," 1206.

worldviews were inherited from Christianity, which sanctioned exploitative attitudes and behaviors. White concluded that Christians must transform their worldviews of nature and nature-human relations, and proposed a retrieval of the egalitarian and ecologically sensitive model of St. Francis. Many theologians agreed that, to reconfigure Euro-western culture's relationships with nature, nothing short of a reconstruction of the Christian worldview of nature, humanity, and the nature-human relationship would suffice.[8] For example, in their "Series Forward," Mary Evelyn Tucker and John Grim write that religions are potent cultural institutions because traditionally they have provided the world-shaping social constructions—indeed, religions provide the foundational narratives that tell us how the world came to be, who we are, and how we are to relate to the world around us, be it our fellow urbanites or the larger created order. Tucker and Grim affirm that "Religions thus generate worldviews and ethics which underlie fundamental attitudes and values of different cultures and societies."[9]

In the field of ecotheology, many have argued that how we value nature must be changed and some have argued that we must change how we understand nature-human relations, but fewer ecotheological scholars or activists have called for changes is how we construct the idea of nature. Of those who have tackled a reconstruction of the idea of nature, many have argued for a return to older, organic constructs of nature as a means to revitalize relations with nature, or

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[8] For example, Paul H. Santmire, *Behold the Lilies: Jesus and the Contemplation of Nature—A Primer* (Eugene, OR: Cascade Books, 2017), 6; Christina Z. Peppard, "Denaturing Nature," *Union Seminary Quarterly Review* 63, no. 1–2 (Spring Summer 2011): 120. doi.org/10.7916/D8765DNN.

[9] Mary Evelyn Tucker and John Grim, "Christianity and Ecology: Seeking the Well-Being of Earth and Humans," series foreword to *Christianity and Ecology: Seeking the Well-Being of Earth and Humans*, eds. Dieter T. Hessel and Rosemary Radford Ruether (Cambridge: Harvard University Press, 2000), xi–xxxii.
More recently, Susan Powers Bratton, "Eco-Dimensionality as a Religious Foundation for Sustainability," *Sustainability* 10, no. 4 (2018): 1021.

adopting less-problematic constructs of nature from other cultures.[10] Others have argued for non-dualistic or non-anthropocentric constructs of nature. Still others have recognized that constructs of nature are often too wholistic or too particular. For example, J. Baird Callicott and Rogers Ames stated:

> Hence, to begin adequately to address environmental problems, philosophical presuppositions must be revised to jibe with an ecological description of nature and ...ethics must be enlarged so as to valorize and enfranchise nature as a whole as well as individual nonhuman natural entities.[11]

Yet, few explicitly acknowledge that nature has a broad range of meanings, and that nature as is a highly constructed concept. There have been few outside of Process theology who have recognized the materiality of dominant constructions of nature, or that constructions of nature originating in the ninetieth century that are idealized or instrumentalized. However, while the prescriptions to reconstruct are varied, a clear consensus of scholars and activists agree that our conventional worldviews, which include constructions of nature, are real obstructions. Hence, ecotheological reconstruction of nature needs to be pushed further.

In previous chapters, I have argued that constructs, which are elements of worldviews, need to be revealed, critically analyzed, and reconstructed as a first step to any rehabilitation of Euro-western cultural engagements with nature. I suggest a reorientation to a smaller unit of analysis and reconstruction—the social construction of nature. It is my opinion that many ecotheologians have argued for a reformulation of the relationship between nature and humanity without examining that each are socially constructed. As the field of ecotheology has developed

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[10] It is debatable whether those constructions of nature are truly as they seem. St. Francis of Assisi is widely thought of a medieval environmentalist, yet Francis himself most often values nature as instrumentally valuable rather than intrinsically so.

[11] J. Baird Callicott and Roger T. Ames, introduction to "The Asian Traditions as a Conceptual Resource for Environmental Philosophy," in *Nature in Asian Traditions of Thought: Essays and Environmental Philosophy,* eds. J. Baird Callicott and Roger T. Ames (Albany, NY: SUNY Press, 1989), 3.

and broadened, there have been ecotheologians who have addressed the problem of how nature is socially constructed rather than the larger topic of worldview. For example, theologian Gordon Kaufman examined how problematic concepts of nature have been, and argued that for theologians and others concerned with the ultimate reality and the state of the planet, "…the concept [nature] will have to be subjected to careful scrutiny and used only with the greatest care."[12] Similarly, Anna Peterson, a religious environmental ethicist, stated: "In other words, the present ecological crisis does not just reflect a few reparable flaws in Euro-western attitudes towards the physical environment. Instead, the crisis reveals a profound inability – built into dominant ways of conceiving nature, the self, and the good—to build a healthy relationship between humans and the rest of creation."[13]

How we construct nature has consequences, for it shapes how we interact with it.[14, 15] Our most dominant constructs of nature enable and limit both how we understand what nature is and also govern our never-ending relationship with nature. They also, enable and limit how we evaluate our impact on the natural world and how we might protect, conserve, and restore watersheds and ecosystems that we have damaged. In environmental discourses, nature is most predominately conceptualized by its distance from the built world of human culture.[16, 17] Hence, as stated above, our ideas of nature are constructed by culture, which in turn are a part of a larger repertoire of shared meaning systems. Constructs, such as "unspoiled nature" or "remote and

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[12] Gordon D. Kaufman, "A Problem for Theology: The Concept of Nature," *Harvard Theological Review* 65, no. 3 (July 1972), 348.
[13] Anna L. Peterson, *Being Human: Ethics, Environment, and Our Place in the World* (Berkeley, CA: University of California Press, 2001), 80.
[14] Sallie McFague, *Models of God: Theology for an Ecological, Nuclear Age* (Philadelphia: Fortress Press, 1987), 3.
[15] J.D. Proctor, "Concepts of Nature: Environmental and Ecological," in *International Encyclopedia of the Social and Behavioral Sciences*, eds. Neil J. Smelser and Paul B. Baltes (New York, NY: Elsevier, 2001), 10398.
[16] Anna L. Peterson, "Environmental Ethics and the Social Construction of Nature," *Environmental Ethics* 21, no. 4 (Winter 1999): 342. doi.org/10.5840/enviroethics19992142.
[17] Veronica Strang, *The Meaning of Water* (Oxford: Berg, 2006), 115.

uncivilized nature" are the building blocks with which we build our actions every day. Constructs profoundly shape our conduct. Rather than changing our values, the process of revisiting, analyzing and reconstructing our constructs will change our cultural repertoires, thus allowing for new actions.

Therefore, below I will examine the word *nature* itself as well as how the idea of nature has been socially constructed in the West. I will discuss the criticism that ecotheology has of the dominant social constructs, and how Christianity has contributed to this history. However, I will also make note of how economic, political, and social forces also contributed to the dominant constructs, and how their conceptual frames negatively mediated the West's engagement with and exploitation of nature. I will then examine responses from ecotheology that attempt to retrieve, reevaluation, or reconstruct dominant constructs.

However, before moving forward, I reiterate that there is no one construct of nature. I have stated this in earlier chapters about constructs of water, and I will also say it in chapter six in terms of human nature. Confoundingly, human beings are able to hold contradictory conceptualizations at the same time, and we do this with constructions of nature.[18] What I am addressing in this chapter and others are the most dominant social constructions, which are taken-for-granted at the policy level, within academic and political environmental discourses, and among the artistic and commercial sectors that are highly influential in reinforcing the social constructions of nature. Other constructions of nature are widely held but they are less regulative of the collective levels of engagement.

[18] Indeed, holding contradictory ideas is commonplace and we often switch between them unconsciously. Works of fiction can often lead us to do this. Jonathan Gottshall discusses this in his book *The Storytelling Animal: How Stories Make Us Human* (New York: Houghton Mifflin Harcourt, 2012).

The chapter itself is divided into five sections. The first section introduces hiddenness of the social constructions of nature in the West, thereby setting the stage for the second and third sections. The section two considers the need for ecotheology to reconstruct nature. The three section outlines the most dominant constructs of nature, and three important paradigm shifts in how it has come to been constructed. Section four considers the responses of several ecotheological approaches to the dominant constructs of nature, and section five I offer three ecotheological alternative constructions of nature. As I mentioned in chapter one, I presume a soft social constructionism.

Ecotheology and Lynn White, Jr.'s Gauntlet

I am going to use White as a rhetorical foil because, while White made a dubious causal connection between the medieval Christian doctrine of creation and the ecologically destructive social practices of contemporary Euro-western culture, his article pointed to the need to critically analyze and reconstruct how nature and nature-human relations have been understood in the West. White's academic specialty was the history of technology, and thus his argument stems from an extensive understanding of shifts in technology that pre-date the industrial revolution and in many cases were necessary precursors to large-scale industrial production, such as the water wheel and bills of exchange (what came to be bank checks). However, White did not address the political, economic, and social forces that were also a part of the dominant construction of nature as "protected sanctuary and natural resource," but other scholars have done so.[19] White's indictment of Christianity as directly causing the ecological crisis is no longer

[19] Leslie Sponsel, "Lynn White Jr. and Spiritual Ecology," in *Religion and Ecological Crisis: The "Lynn White Thesis" at Fifty,* eds. Todd LeVasseur and Anna Peterson (London: Routledge, 2016), 95.

seriously debated.[20] However, his larger argument remains valid. Euro-western science and technology each emerged from the dualistic and exceptionalistic worldviews, which means that there is little hope that either can effectively respond to or devise solutions to the eco-crisis.[21] This is because, as I stated in chapter one, White argues, "what we do about ecology depends on our ideas of the man-nature relationship," and those worldviews come to through "a matrix of Christian theology."[22]

While not it was not the first assertation of a Christian ecotheology, White's article was essentially a prophetic lament and judgment by calling Christians to account for the taken-for-granted social constructions of nature that he had contended was the fundamental cause of the ecological crisis. Moreover, White's article also functioned as prophetic energizing because it also pointed to the possibility of a different worldview and therefore an alternative future.[23] To begin, White's article was significant because it captured the attention of many who did not think of the environmental crisis as a moral or religion issue, and indeed galvanized many to re-

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[20] Discussing White's central thesis, that due to its doctrines of creation and *imago Dei,* Christianity is the ultimate cause of Euro-western, consumptive industrialism, and therefore eco-crisis, ecotheologian Gregory Hitzhusen writes: "there is no good evidence that the biblical emphasis on dominion results in environmental neglect." Gregory E. Hitzhusen, "Judeo-Christian Theology and The Environment: Moving Beyond Scepticism to New Sources for Environmental Education in the United States," *Environmental Education Research,* 13:1 (2007): 60, doi: 10.1080/13504620601122699. See Ben Minteer and Robert E. Manning, "An Appraisal of the Critique of Anthropocentrism and Three Lesser Known Themes in Lynn White's 'The Historical Roots of Our Ecologic Crisis,'" *Organization & Environment* 18, no. 2 (2005): 163–76, www.jstor.org/stable/26162006. Also, Todd LeVasseur and Anna Peterson, introduction to *Religion and Ecological Crisis: The "Lynn White Thesis"at Fifty* (London: Routledge, 2016), 6–10.

[21] White, "Historic Roots," 1206. White used the terms *attitudes*, *view*, *Christian view*, and *Medieval view* somewhat interchangeably. I have interpreted his meaning to be closest to worldview (i.e., *weltanschauung),* which is similar but not the same as social construction. Note White's argument is based on a Weberian model of culture, that cultural ideas (or attitudes) act as "switchman", and thus are causally linked to the ecological crisis. White is not arguing for a materialist cause, such as shifts in economic goods or climate that impacted and transformed cultural practices but is explicitly stating that Judeo-Christian anthropological worldviews and values created a legitimizing ethos for consumptive, even ravenous, attitudes and action directed towards nature.

[22] White, "Historical Roots," 1207.

[23] To the point that White's work has been "stimulating" for ecological ethics and ecotheology note that Eaton says of "Historical Roots" that it "pointed to a direction of analysis of the developing ecological crisis that has since borne much fruit." Heather Eaton, "The Challenges of Worldview Transformation," *Religion and Ecological Crisis: The "Lynn White Thesis" at Fifty* (London: Routledge, 2016), 125.

evaluate and reconstruct their theological formulations on the creation, and the role of humanity within the creation.[24] As he argues that Christianity's attitudes toward nature and humanity are the root cause of the environmental crisis, White has also established a distinct role for Christians to respond to the crisis by reimagining both doctrine and praxis. White also claimed that Christian attitudes were so instilled into Euro-western culture that one not need be a Christian to be ruled by its worldview.

The core of Lynn White Jr.'s argument is that our scientific and technological attitudes that have sanctioned exploitative engagements grew from Christianity's worldviews (viz. frame of mind, social construct) towards the nature and the relation of humanity to nature in the Christian world of medieval, Latin Europe.[25] Due to the interpretation of the doctrine of creation by medieval Christians, humanity has been understood as ontologically different and, moreover, superior to the rest of the created order, and thus, the intellectual norms of the Latin Christian world evolved anthropocentrically and by the twentieth century have become a de facto license to exploit nature if it serves humanity.[26] This is because, as White states, how individuals engage

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[24] Elspeth Whitney's characterization of White as equally historian, public intellectual, and occasional preacher, as well as her judgment that White intended for "Historical Roots," and his later article "Continuing the Conversation," to be provocative and spark social change, gives me confidence to ascribe "prophetic lament" to White's thesis. Additionally, Mark Stoll's use of the eponym *jeremiad* for "Historical Roots" also affirms my decision. See Whiney, "Lynn White Jr.'s "The Historical Roots", 21–23, and "Sinners in the Hands of an Ecological Crisis: Lynn White's Environmental Jeremiad," 47–50, in *Religion and Ecological Crisis,* eds. Lavasier and Peterson.

[25] White dates the Christian "exploitative attitude" as beginning in the ninth century, and notes that after the 1054 CE schism between what is now the eastern Christian and western Christian churches, the doctrines of the Orthodox Christianity emphasized right thinking rather than right conduct, and therefore the mastery of nature by monastic orders and, later, artisans was not prioritized or expected.

[26] It is worth noting that White does not argue that either of the Genesis creation narratives are directly responsible for modern, ecologically harm. Strictly speaking, White's argument is that the medieval, Latin Christian (i.e., not Eastern Christian) anthropocentric interpretations of humanity's purpose and *imago Dei* are responsible the technological attitudes that, approximately seven centuries later, gave sanction to modernity's abuse of nature. White's aim was to name Christian worldviews as responsible but did not see Christianity as inherently anthropocentric. Yet, White's argued that Christianity's culpability for the eco-crisis demanded reconstruction of the Christian doctrine of creation and ecological action. See John B. Cobb, Jr. "The Biblical Responsibility for the Ecological Crisis," *Second Opinion* 18 (October, 1992), 11–21, 13.

with nature "depends on what they think about themselves in relation to things around them. Human ecology is deeply conditioned by beliefs about our nature and destiny—that is, by religion."[27] Put another way, the most deeply held, often taken-for-granted ways in which we grasp and organize our understanding of nature and humanity have been configured through precepts of Christian doctrine about nature and humanity, regardless of whether Euro-western culture is theistic, or individuals are themselves believers.[28]

White's proposed corrective to rehabilitating Christianity's exploitative worldview was a retrieval and adoption of Franciscan attitudes towards nature, what he termed an alternative Christian view. White suggested that "[Francis'] view of nature and of man rested on a unique sort of pan-psychism of all things animate and inanimate, designed for the glorification of their transcendent Creator, who, in the ultimate gesture of cosmic humility, assumed flesh, lay helpless in a manger, and hung dying on a scaffold." White admired what he interpreted as Francis' teachings on a radical egalitarianism, that all creatures of God were valuable and loved, and that humans did not possess a special role that set them apart and above nonhuman animals and "inanimate" creations of God (for example, Brother Sun and Sister Water). White states that what is of crucial significance is Francis' commitment to human humility and the autonomy of the created world. In doing do, White believed that Francis overcame the dualism and exceptionalism of traditional Christian doctrine of creation.

The responses to White have a wide range, from those who agreed to apologists and reformers. Many ecotheologians took up White's challenge. Responses from secular and

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[27] White, "Historical Roots," 1205.
[28] Heather Eaton, "Where Do We Go from Here? Methodology, Next Steps, Social Change," in *Christian Faith and the Earth: Current Paths and Emerging Horizons in Ecotheology,* eds. Ernst M. Conradie, Sigurd Bergmann, Celia Deane-Drummond, and Denis Edwards (London: Bloomsbury Publishing, 2015), 200.

religious voices, many in agreement that irredeemably anthropocentric Christianity had indeed causes the eco-crisis but others countered that White had overestimated Christianity's role in the development of contemporary Euro-western culture, had overlooked significant parts of Christian teaching that centered an ecologically-exploitative worldview, and still others that criticized White's historical analysis. Many theologians and biblical scholars responded with retrievals, reevaluations, and reconstructions of Christianity's doctrine of creation, as well as reformulations of theological anthropology (which I will examine in chapter seven). What most of these scholars sought to do was to make visible the unconscious meanings Euro-western culture assumes for nature, and to reveal how those social constructs and worldviews have shaped and limited how contemporary Euro-western societies have interacted with the natural world. This chapter's purpose is to examine how the ideas of nature have governed nature-human relations, and thus I will not review the larger body of literature that are responses to White. There are several significant projects which specifically address worldview, and a number of ecotheologians have examined the idea of nature in the Christian tradition and what are approbate Christian responses.[29] However, while many of these scholars tackled worldview, some went deeper to examine the idea of nature, such as Heather Eaton, Gordon Kaufman, Alister McGrath, Christiana Peppard, and Anna Peterson.

White's theorized that medieval Christianity's understanding of nature and humanity is still deeply embedded in religious and secular Euro-western culture. What I am trying to bring to the fore here is that, while White's thesis was that the anthropocentrism of the Christian tradition, that Christianity implicitly taught that the natural world was made for the sake of human beings and they are to rule over it. Such doctrine is not found in any specific biblical

[29] Most notable among them is the work of John Cobb, Sallie McFague, James Nash, and Paul Santmire.

passage, nor is there any specific creed taught that human being should exploit the natural world. Rather, as the anthropocentrism (view of man) is pervasive throughout the texts and creeds, it became accepted that humanity was separate and superior to the natural world, and that the innate role of humankind is to harness and harvest the natural world without restraint. Because contemporary Euro-western culture thinks of human nature in anthropocentric terms, we cannot overcome our insatiable exploitation of the natural world.

Above, I have looked at how Christianity certainly has played a role in establishing, through the doctrine of creation and a focus on human salvation, a highly dualistic and exceptionalistic view of nature and nature-human relations that set up the necessary conditions for later political, economic, and social forces to transform how nature was understood and represented. Below I will examine how the post-modern construction of nature as unmodified, material object emerged. However, before I do so, I will first introduce a few of the idiosyncrasies of the idea of nature.

Dominate Constructions of Nature in the West

This section introduces basic points about how nature has been socially constructed in Euro-western discourse. The first part discusses difficulties inherent in the word nature. The second subsection discusses how nature is simultaneous conceived the totality of reality including humanity and also as the totality of reality excepting humanity. In public discourses about environmental issues, the use of the term *nature* has several difficulties.[30] Any discussion of nature must certainly begin by acknowledging the complexity and ambiguity of the word. Few

[30] As I have stated in previous chapters, the act of social construction is a natural part of human cognition. Human cognition is energy intensive, and using social constructs is a pragmatic conservation of brain power. However, what is problematic is the use of imprecise or inaccurate conceptualizations. Equally troublesome is when an abstract concept—a mental representation—is treated as if it were a concrete thing. However, the human mind can easily do this, and many of our dominant constructs—such as "art" or "family"—are both concrete entities and abstractions. Abstractions can readily become reified, as has occurred with nature, which necessitates reconstruction.

terms are as common in modern usage, yet have such wide and varied meanings.[31] The most recent edition of the Oxford English Dictionary lists fourteen separate definitions of the term, whereas collegiate dictionaries have five to nine definitions.[32] Part of why we have multiple meanings of nature is that we have not abandoned earlier meanings, yet this polysemy is easy to overlook.[33]

Nature has an intricate etymology. The term has been in use for at least seven centuries, and its meaning has expanded, particularly in the past two hundred years.[34] In his seminal *Keywords*, Raymond Williams divides the meanings of *nature* into three main senses, and explains that the first sense dates from the thirteenth century, the second sense from the fourteenth century, and the third sense from the seventeenth century. Williams's work goes on to clarify the different meanings that each sense conveys. To describe the character of an object or idea is a decidedly different use of the term than to signify the physical force that may be thought to cause and regulate reality. Williams gives the meanings of *nature* as: (i) the unchanging character or essence of a thing, (ii) the foundational, controlling force, and (iii) the entire world, sometimes inclusive of humanity and sometimes exclusive.[35] Hence, the many meanings of nature are situated within history and culture, and will always be so situated. There can be no universal way to understand and represent nature, and therefore it is necessary to make plain

[31] Kate Soper, *What Is Nature?: Culture, Politics, and the Non-Human* (Oxford: Blackwell, 1998), 1.
[32] This range is based on my own survey of eight collegiate dictionaries.
[33] Williams, "Nature" in *Keywords: A Vocabulary of Culture and Society* (Oxford: Oxford University Press, 1983), 223.
[34] Williams, *Keywords*, 219–224; Williams, "Ideas of Nature," in *Problems in Materialism and Culture* (London: Verso, 1980), 67.
[35] Williams, *Keywords*, 223–24.

which nature is denoted when we use *nature* within ecotheology discourses, as well as larger discourses of ecological concern.[36]

While Williams explains that sense ii emerged within the natural law tradition, his work on culture was addressed to a largely secular audience, which may explain why he does not address how *nature* has three other distinct senses within the Christian tradition. Fortunately, these three senses have been explicated by biblical scholar Richard Bauckham.[37] For the purposes of clarity, namely to keep them distinct from Williams's senses, I will designate them using letters instead of Roman numerals. They are as follows: (a) essence or character of a thing, (b) the whole of the created world as separate and distinct from God, (c) the created world (inclusive of humans) prior to the fall into sin, and (d) the whole of the created world exclusive of humanity.[38] Hence, an additional layer of duality exists within the Christian tradition between the transcendent God and the not-transcendent creation, with humanity sometimes understood to be ontologically distinct from nature and sometimes not. It is little wonder that Euro-western culture, which has been highly influenced epistemologically and ethical by Christianity, has an ambivalent and complex social construction of nature.

Further, there are other idiosyncrasies that make the idea of nature complex. In his article "A Problem for Theology," theologian Gordon Kaufman explains how the terms *nature* and *world* are both used to signify the whole of reality.[39] Both words may be used metaphorically to connote a thing that is an undifferentiated whole but only *nature* can denote an experienceable

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[36] *Nature* in Williams's third sense (and its variants *wilderness*, *the wild*, and *the environment*) is used as a mass noun, and therefore is grammatically non-discrete. Interestingly, terms such as *forests*, *oceans*, are collective nouns, i.e. a grouping of things understood as a whole, but are plural count nouns. Yet, nature in Williams's first and second senses, i.e. the character of a thing and a controlling force, are count nouns. These grammatical subtleties further demonstrate how complex the term nature is.
[37] Richard Bauckham, "First Steps to a Theology of Nature," *The Evangelical Quarterly* 58, no. 3 (1986): 229–44.
[38] Bauckham, "First Steps to a Theology of Nature," 229–244.
[39] Kaufman, "Problem for Theology," 343–345.

thing. Kaufman explains that "Nature is experienceable as well as conceivable; world is only a concept."[40] When we use *world*, we can only be speaking metaphorically and reductively but when we use *nature*, ambiguity is introduced. In addition, *nature* may denote both particular instances within the larger material world but may also be used to denote non-discrete, that is universal, ideas. As environmental historian Peter Coates writes:

> In most social analyses, regardless of whether the theoretical position was social constructionist or neo-evolutionist, nature has been treated as a whole and single unit. This is the case regardless of whether nature is categorized as a physical place, as 'unspoiled nature' or 'conquered nature'; as the collective phenomenon of the world or the universe; as an essence or quality informing the workings of the world or universe; as an inspiration or guide for people or as a source of authority; or as the conceptual opposite of culture."[41]

While it is not unusual in the modern usage of English to use a word as both a discrete and non-discreet noun, it is crucial to notice our penchant for doing so, and to attend to the conceptual consequences of using the discreet, that is particular, and non-discrete, that is universal. The above is intended to point out that the very word *nature* is complex due to both its etymology and usage, and how we understand what nature actually is is even more complicated. When we speak abstractly about nature, most often we are unaware that we are talking about a thing that is real (concrete) and has its own existence independent of humanity and human modifications of it. In addition, we are often unaware of how we move back and forth between the particular, concrete nature that is actual and the abstract social constructions of nature that circumscribe our discourses. Further, we are unaware that we have competing constructions of nature, some of which have more influence than others, which is what I will spend the rest of this section discussing.

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[40] Kaufman, "Problem for Theology," 345.
[41] Peter Coates, *Nature: Western Attitudes Since Ancient Times* (Berkeley: University of California Press, 1998) 3.

That Which Is Not Culture— The Dominate Construct of Nature

In the West, we have constructed nature most often in Williams's third sense of material world, and within that usage, the material world is constructed as a space that is distinct and removed from human culture or as material substances or beings (nonhuman) that have not been modified by human culture. Thus, the nature that we believe must be preserved, conserved, or restored is necessarily not built nor modified by humans, exists at a distance from culture, and is ideally a habitat for non-human living beings.[42] Alternatively, nature is worthy of protection if the abiotic elements existing there are valuable as raw materials for human commerce and industry, such as minerals, fossil fuels, or even water.

Our current construct of nature is a material realm consisting of a mix of abiotic and biotic elements. Neither biotic or abiotic elements are animated by a spirit or soul, nor do they have a *telos*. Instead, the elements of nature are determined by laws of motion, causality, and contingency that are external to them. Humanity can experience and understand nature through phenomenological senses, which means that, on the whole, nature is a collection of datum and interactions that can be studied, cataloged, and known. Nature is also defined by its natality, its degree of modification and separateness, namely that its proximity to that which it is not (civilization). Some elements of nature are thought to have more agency (that is, less automatic response to stimuli) than others, such as a tiger choosing new territory as compared to the rotation of the sun, and some elements have a degree of self-generation and self-organization, for example mammals, while others, such as ocean currents, do not.

[42] Williams, *Keywords*, 223.

It is not within the scope of this chapter to catalogue all constructs of nature that have emerged in modern West, and others have already done an excellent job.[43] Instead, I will discuss three significant shifts in how nature has been socially constructed in modernity—and these shifts have led to competing constructions of nature, meaning that the fact that we often hold more than one idea of what nature is and they can contradict one another. Each of these constructs is grounded in Williams's sense iii, that is nature as the entire world, which allows for understanding nature of inclusive or exclusive of humanity. However, each of these constructions also conceptualize nature as the collective phenomena of the universe largely exclusive of humanity. These social constructions have been the dominant ways in which nature has been understood the West (in the United States in particular) for the past 200 years.[44] To review, nature in the sense of the whole of the material world has been and continues to be constructed predominantly with five characteristics: raw and unformed material; determined; inanimate; separate from the built world of humanity; and knowable through the senses. One may further distinguish nature as the unspoiled, separate spaces that exist apart from human culture.[45] A third distinction is nature in the sense of cache or reserve of inanimate, raw materials or energy.

While many ecotheologians have examined the dualism and exceptionalism that have come to the post-modern Euro-western culture, some from the perspective of Christian texts and

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[43] See Roderick Nash, *Wilderness and the American Mind (New Haven: Yale University Press, 1982);* John Stilgoe, *Common Landscape of America, 1580 to 1845 (New Haven: Yale University Press, 1982);* William Cronon's *Uncommon Ground* (New York: W.W. Norton, 1995); Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (New York: HarperSanFrancisco, 1990); Kate Soper, *What Is Nature?*; and Daniel Botkin, *Discordant Harmonies: A New Ecology for the Twenty-First Century* (New York: Oxford University Press, 1990).

[44] Nash, *Wilderness and the American Mind*, 1–7; Peppard, "Denaturing Nature," 98–102.

[45] A dualistic vision of nature is dominant in Euro-western culture, according to Philippe Descola and Gísli Pálsson, eds., *Nature and Society* (London: Routledge, 1996), 2–9. See also Tim Ingold, *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill* (New York: Routledge, 2002), 42–47.

doctrines and other through religious, mainly Christian, worldviews, fewer have examined the social construction of nature or humanity that emerged out of the Enlightenment, and fewer still have examined in detail the influence of nineteenth and twentieth century scientific, political, and economic forces.[46] My purpose in the next section is to make visible the direct antecedents of the current social construction of nature, and how they have circumscribed our ideas of nature. The devaluing and abstracting of nature that began in the Enlightenment can still be seen as echoes in the post-modern day, and, what is more, if we look with care, we may also see variations of Enlightenment dualism and anthropocentrism that emerge in later centuries, which we are powerful shaped by yet are also largely incognizant of in the present day. There is no understanding of White's challenge, and the subsequent call by ecotheology to reconstruct worldviews, without understanding that the Enlightenment began a radical conceptual transformation of nature, and that political, economic, and social forces of the nineteenth and twentieth centuries have further altered how nature is understood and represented.

The Social Construction of Nature is a Historical Process

While our modern habits of imagining nature seem given, how nature is conceptualized in the West has changed significantly over the centuries.[47] As we saw above, the term *nature* has had a semantic drift in the English language; *nature* began as a term to name the innate quality of a thing, and shifted to signify the governing forces that underlie and determine process, such as gravitational pull or plate tectonics. These senses of *nature* reflect how the social construction of nature had changed during the medieval and early modern periods. Prior to the sixteenth and

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[46] Eaton, "Challenges of Worldview Transformation," 124. Christiana Peppard's "Denaturing Nature" addresses this somewhat. Likewise, Anna Peterson's work, most notably *Being Human* addresses the historic processes of the social construction of nature. However, Peterson gives more attention to the question of whether nature is socially constructed and spends much less time discussing the construction of nature as a pristine, separate space or stockpile of raw materials.

[47] R.G. Collingwood, *The Idea of Nature* (Oxford University Press: Oxford, 1960), 2–13; William Cronon, "The Trouble with Wilderness: Or, Getting Back to the Wrong Nature," *Environmental History* 1, no. 1 (1996): ___.

seventeenth centuries, nature and culture were not thought to be separate but rather as intertwined.[48] Culture, that is the world that is built, sustained, destroyed, and re-built by humanity, was understood to exist within the physical world. Further, culture's many components such as language, rituals, traditions, institutions, and its physical artifacts, such as towns, aqueducts, and new breeds of grains and livestock, were all understood to be produced from the raw material of nature and shaped by generation after generation of humanity. For example, cities such as Paris and London were understood as both given and also built. Said another way, cities were both material and cultural.

This is not to say that the ancient or medieval mind was without any dualism or anthropocentrism. In the pre-Enlightenment West, due to the urban origins of the early Christian communities and the influence of Greek thought during the Patristic period, there was a dualism between spirit and matter, which allowed for a depreciation of human body, and of sexuality and female gender.[49] In addition, the focus on human sin and salvation sanctioned an innate anthropocentrism. White was correct to see Christian doctrine and praxis as establishing the foundations of a dualistic and exceptionalistic construction of nature. Yet, the theocentric character of Christian doctrine and praxis, as well as the doctrine of incarnation, tempered much of the dualism and anthropocentrism. Further, Christian tradition understood culture as a part of creation, not in opposition to it.[50]

However, the work of philosophers such as Descartes, Hume, and Kant, as well as natural philosophers such as Bacon, Newton, and Locke, introduced a much sharper division between

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[48] R.G. Collingwood, *The Idea of Nature*, 4–9.
[49] Rosemary Radford Ruether, *Gaia and God: An Ecofeminist Theology of Earth Healing* (San Francisco: Harper San Francisco, 1992), 26–28.
[50] John B. Cobb, Jr. afterword in *Wiley Blackwell Companion to Religion and Ecology,* ed. John Hart (Hoboken, NJ: John Wiley & Sons, 2017), 505–506, doi:10.1002/9781118465523.after.

nature and culture. During the Scientific Revolution and the Enlightenment, the emergence of the Williams's third sense of *nature*—the collective phenomena of the world.[51] The metaphor of nature as a machine (first used in the early 1600s by Francis Bacon) came to dominate how nature was conceived, that is as inanimate, determined matter, and known through the senses alone. By the closing of the 1700s, nature and culture came to be seen as mutually exclusive of one another, with culture having the ability to shape nature but nature having little, if any, power to shape culture.[52]

It is the epistemological watershed of the Enlightenment, and later two further transformations— the Romantic period and the Second Industrial Revolution.[53] In the Second Industrial Revolution several forces coalesced, such as capitalism, large-scale industrialization, and conservationism.[54] I will now turn to in order to illustrate why the dominant construction of nature in the post-modern West is nature as unmodified, material object.

THE ENLIGHTENMENT

The social construction of nature that emerged in the Enlightenment was a logical extension of the emphasis on the scientific methodology, which was emphasized that nature could be

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[51] As noted in chapter two, the Scientific Revolution can loosely be dated as beginning with Copernicus' *On the Revolutions of the Heavenly Spheres* (1543) and ending with Isaac Newton's *Principa* (1687). Likewise, the Enlightenment is a historic period that has no definitive date. Many historians mark it as beginning with Descartes statement: "Cogito, ergo sum," which is found in *Principles of Philosophy* (1644), and ending with the French Revolution (1798).

[52] It is worthwhile to note that the dichotomy between nature and culture was the product of an intellectual community that was attempting to answer previously unasked questions. The Scientific Revolution divorced nature from culture as a means to understand first God, and later the material world, rather than as a direct attack on nature. See Williams, *Ideas of Nature,* 68–69.

[53] Primarily an intellectual, literary, and artistic movement, the Romantic period is generally dated as between 1800 and 1850, whereas the Progressive Era was social activism and political reform, which may be dated approximately from 1890–1920. As stated in chapter two, the Second Industrial Revolution is generally dated as beginning in 1870 and ending with the First World War in 1914. It occurred primarily in western Europe, notably German and Great Britain, as well as Canada, the United States, and Japan.

[54] Larry Rasmussen, "Returning to Our Senses: A Theology of the Cross as a Theology for Eco-Justice," in Dieter Hessel*, After Nature's Revolt: Eco-Justice and Theology* (Minneapolis: Fortress Press, 1992), 51–53. Rasmussen's point is inclusive of the First and the Second Industrial Revolutions.

"known" through observation and experimentation. Francis Bacon, and others, thought of nature as a book that could be decoded to know the mind of God. Later scholars, such as Thomas Hobbes and Isaac Newton, were influential in establishing the metaphor of nature as an orderly machine was governed by eternal laws and could therefore be manipulated or mastered to work for humankind. One of the hallmarks of Enlightenment thought is to think of nature as components separated from the constituent whole, nor to think of the constituent whole as living or having agency. Nature is not conceptualized as autonomous, self-generating or self-self-organizing system. It is a fixed machine that must be quantified, comprehended, and put to use.

While many Enlightenment thinkers had not intended to divide nature from humanity, and some were indeed trying to understand the Divine through reading nature, nevertheless the new construction of nature as machine resulted in many problems. It is highly dualistic, setting material nature in opposition to and beneath humanity and culture. It is also anthropocentric, for it defines nature in terms of human interests and human categories. Additionally, a mechanical construction of nature creates a fractured view, and leads to devaluation of the constituent whole. Likewise, nature as machine creates a construct of nature as other. Conceiving of nature as an object that is absolutely knowable disaggregates and disenchants nature. Additionally, conceiving of nature as primarily machine-like or as an object of study empties nature of intrinsic value. While constructing nature as an object of inquiry was in service to an ethic of empiricism and professionalism in the natural sciences, it has had unintended consequences, which some would call disastrous.[55] As our actions are shaped and limited by our constructs,

[55] Michael S. Northcott, *A Political Theology of Climate Change* (Cambridge: Eerdmans Publishing, 2013), 48–25, 64–67.

conceiving of nature as an object to investigate exhaustively makes nature into an objectified other.

However, while the Enlightenment construct of nature as machine is problematic, it cannot be said to have arisen directly from Christine doctrine. Indeed, it seems to have much older roots in Stoicism and the dualism of Platonic thought.[56] In addition, many other forces were needed before the exploitation of nature on the scale that we have seen for the past one hundred years or more, such as the divorce between nature and culture or the idea of nature as natural resource. Moreover, other economic, political, and intellectual forces were also necessary. Let us turn now to the influence of the Romantic period.

ROMANTIC CONSTRUCTION OF NATURE

In the eightieth century, an intellectual and artistic reaction against the construction of nature as inanimate machine emerged as part of the Romantic period.[57] As I wrote in chapter one and two, the rapid industrialization and urbanization that many regions in the West experienced transformed how and where people lived and worked, and altered the social order in much of Europe, and more widely, due to colonialism/imperialism, in Asia, Africa, and the Americas. First in Europe and later in North America, Romantic thinkers re-interpreted and countered the mechanistic social construction of nature. Thus, they reimagined nature as an organic whole that has teleological causality, internal reciprocity (its parts work relationally), and as a self-generating and self-organizing dynamic, living organism. In their criticism of the

[56] Ruether, *Gaia and God*, 127–142.

[57] The Romantic Period is often represented as singular and unambiguous cultural period. Several scholars have argued that is not the case. However, as my purpose is to explain how these periods has influenced how nature is currently constructed, I will be speaking broadly, with the understanding that there is always imprecision and homogenization introduced when using designations such as the Middle Ages, the Renaissance, or the Romantic Period. The Romantic period's influence on Euro-western culture remains strong, and thought not well known in popular culture, was a significant influence on American Transcendentalists, who are themselves still influential on twenty-first century American culture.

Enlightenment's stark interpretation of nature, the Romantics believed that humans and nature had become alienated and that nature needed re-enchantment. Nature was deemed to be alive, and moreover, was the locus of Holy Spirit. The Romantics imagined the natural world as a space apart, where humanity could encounter God. The Romantic thinkers exalted nature as a sublime space that humanity might periodically retreat to and, through contemplation and communion with nature, initiate human salvation.

The thoughts and priorities of Romantic thinkers emerged in the United States primarily through Transcendentalism and, later, the Conservation moment. American thinkers, such as Henry David Thoreau, Ralph Waldo Emerson, George Perkins Marsh, Gifford Pichot, and Theodore Roosevelt were informed and shaped by the Romantic construction of nature as separate, unspoiled, and sublime. In turn, these highly influential men shaped American intellectual, social, and political understandings of nature.[58] Their idea of conservation/preservation, which assumes nature as a place apart, has predominated for over one hundred years. Indeed, one of the leading environmentalists in the United States, Bill McKibbon, defines nature as necessarily separate and distant from humanity: "separate, uncivilizable force," "separate natural world," and "the separate and wild province, the world apart from man."[59]

While one cannot say that there was an absolute acceptance of a Romantic idea of nature in the West, its influence was widespread and has endured into the twenty-first century. Much like our current moment, the Romantic period was a time of great political, economic and social upheaval in Europe, as well as within its many colonial empires, and therefore epistemological

[58] Mark R. Stoll, "Sinners in the Hands of an Ecological Crisis: Lynn White's Environmental Jeremiad," in *Religion and Ecological Crisis: The "Lynn White Thesis" at Fifty,* ed. Todd LeVasseur and Anna Peterson (London: Routledge, 2016), 47–50.
[59] Bill McKibbon, *End of Nature* (New York: Random House, 2006), 40, 60, and 41, respectively.

dispute. Several tenets of Romanticism gained widespread acceptance and have endured, becoming so given that they are not customarily understood as having emerged so recently as the early ninetieth century. What is more, the Romantic movement was not primarily a religious movement but rather an intellectual and artistic one. There is a religious element with the Romantic construction of nature— nature is where the sacred and the profane meet—and that in such a space humanity might find re-enchantment and healing of its alienation from itself through a return to nature, not unlike a return to Eden. Despite the use of religious symbols and doctrines, the energy and creativity of the Romantic moment was directed towards cultural life rather than religious life, and cannot be thought of as a religious movement, nor can the reconstruction of nature be considered specifically Christian doctrine.

The Romantic construction of nature is problematic because it is so confining and binary. There are three main difficulties: separate, unmodified, and unchanging. The Romantic construction of nature as a space apart is problematic because it creates an idealized idea of nature that is dualistic and exceptionalistic. Romantic thinkers rightly sought to find a connection between nature and humanity, as well as a sense of awe and wonder, but it became misplaced.[60] For them, nature is the place to contemplate the Divine. Therefore, nature must be set apart from the mundane world as it is the locale where one may experience the numinous. By setting nature apart from culture, the Romantic mind constructed nature as a place where humanity is always a foreigner and may only briefly sojourn. The Romantics wound up idealizing nature, rather than just being amazed. Not only are nature and humanity constructed as ontologically different, they

[60] Mark R. Stoll, "The Other Scientific Revolution: Calvinist Scientists and the Origins of Ecology," in *After the Death of Nature: Carolyn Merchant and the Future of Human-nature Relations,* eds. Kenneth Worthy, Elizabeth Allison, and Whitney A. Bauman (New York: Routledge, 2018), 161–177.

cannot co-habitat without nature being corrupted by the presence of humanity.[61] Although the construct has a seemingly positive meaning and value of nature, it is in fact quite anthropocentric.

If nature is to be defined by its natal qualities or its wild-ness, then all conceptualizations of nature must be of a space devoid of human beings, and devoid of any domesticity, husbandry, or culture. As we live in the constructs that we create through language, the construct of nature as unmodified does not allow for humanity to live in nature without transforming, civilizing, and therefore destroying, nature. Also, nature as unmodified separates nature and culture from one another, and sets them in opposition. Prior to the Enlightenment, the duality of nature as unmodified meant that nature was understood as "other", and hostile to humanity.[62] Yet, even though this construct is dualistic, nature was constructed as an agent in its own right. In more recent times, the duality of nature as unmodified has meant that nature is a resource, either as a repository of natural resources or as a national treasure to be conserved and protected. Nature is devalued except as an object to be used or cordoned off, and culture is thought of as telos. Additionally, nature as pristine also tends to deny nature as evolving.[63] Nature is thought of in terms of the way it has looked for the past 11,700 years, since the beginning of the Holocene

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[61] Peppard, "Denaturing Nature," 118.
[62] William Cronon, *Uncommon Ground: Toward Reinventing Nature* (New York: W. W. Norton, 1995), 81.
[63] Some ecological propositions are based on the idea that homeostasis is the measure of health and the goal for any environmental policies or environmental management. For example, the Gaia Hypothesis contends that nature is a holistic system that is interdependent, complex, and self-regulating. However, James Lovelock and Lynn Margulis also maintain that, while individual biota have purpose, and that there is dependency between biota such that one organism could be purposeful for another, nevertheless the Earth does not have a purpose, or in more classical language, a telos. Yet, if there is no telos, why then is the Earth as it is currently, or as it was prior to Industrialization, thought of as how the Earth should be? Likewise, if we are to take natural selection as meaningful to how we conceive of nature, any construct of nature that "stops the clock" of evolution, must be viewed with suspicion.

Period of the Cenozoic era. When constructed as the opposite of culture, nature becomes a place that is valued in its native state. Nature is a preserve, rather than a home.

While many ecotheological Christians, as well as secular environmental activists, assume that the Romantic construction of nature engenders a high esteem for nature and promotes conservation and protection, they fail to recognize the anthropocentric quality of the construct. As historian William Cronon writes: "Any way of looking at nature that encourages us to believe we are separate from nature…is likely to reinforce environmentally irresponsible behavior."[64] The Romantic construction of nature sets up an impossible binary.

As with the Enlightenment construction, the Romantic movement had its origins in the intellectual culture of the nineteenth and twentieth centuries rather than arising directly from Christian doctrine or a theological reconstruction of nature.[65] There are undercurrents of the ontological dualism that came to the modern period from Christian sources, but as many originated in Greek Stoicism and Platonism by way of the patristic period, medieval scholars, and the Renaissance. Historian Peter Coates, who has written extensively about ideas of nature in other cultures, holds that what are thought of as nature-affirming constructs of nature in other cultures may indeed be, but such attitudes do not necessarily enable and limit actions in a pro-environmental sense. Coats explains, "Every culture has the capacity not only to transform but to damage the natural world."[66]

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[64] Cronon, "Trouble with Wilderness," 87.
[65] Rosemary Radford Ruether, "Ecofeminism: The Challenge to Theology" in Rosemary Radford Ruether, *Integrating Ecofeminism, Globalization, and World Religions* (Lanham, MD: Rowman & Littlefield Publishers, 2005), 69, 75–6; Ernst M. Conradie, *An Ecological Christian Anthropology: At Home on Earth?* (Aldershot, UK: Ashgate, 2005), 132–134; and Michael S. Northcott, *The Environment and Christian Ethics*, New Studies in Christian Ethics (Cambridge: Cambridge University Press, 1996), 243–249.
[66] Peter Coates, *Nature: Western Attitudes Since Ancient Times* (Berkeley: University of California Press, 2005), 95.

Making the shortcomings of Romantic construction of nature visible is necessary for the field of ecotheology and for REMOs. This is of particular importance because many of the ecotheological responses emerged from and depend on the Romantic construct. Further, a common approach to the problem of duality and anthropocentrism is to define humanity as a "fellow creature," which does not resolve the anthropocentrism nor does it authentically reflect the reality that human beings are different, by a dramatic degree, from other nonhuman animals (I will discuss this more in chapter six).

SECOND INDUSTRIAL REVOLUTION —NATURE AS STOCKPILE, RESERVE OR CACHE

A third shift in the social construction of nature occurred during the last quarter of the nineteenth century, during the Second Industrial Revolution. During this period, a distinction developed between the nature imagined by the Romantic movement, the spaces of unspoiled re-enchanted nature, and the districts where raw materials for capitalism were set apart as a vast stockroom or vault. Nature was reconstructed as a resource. An often-overlooked priority of the Conservation movement of the nineteenth century was to preserve landscapes and waterscapes so that they could be put it to use for the benefit of humanity, not for their own sake. A central idea was that nature was wasted if not appropriated, reclaimed or otherwise put to use.[67]

Hence, while we think that have a positive understanding of nature, we do not. Many of our most central constructs, which we assume foster valuing and caring for the natural world, are dubious and contradictory when examined more closely. White argued that the environmental crisis was caused by Christian worldviews of nature and nature-human relations. As I said above, this is partially true, and many ecotheologians have agreed that the dualism and anthropocentrism that became so central in the West does have some connection to *imago Dei*

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[67] Marc Reisner, *Cadillac Desert: The American West and its Disappearing Water*, rev. ed. (New York: Penguin Press, 1993), 12.

and "subdue and dominate." However, White overlooked the influence of the Enlightenment, and the nineteenth and twentieth century constructions of nature, and the interplay of them all with science, technology, and capitalism. REMOs and ecotheologians cannot. In addition, White failed to see the enormous significance of the Christian church leadership's retreat from its traditional teaching against usury, which made room in the nineteenth and twentieth century for industrialism and capitalism to flourish. Nevertheless, White was correct that our dominant constructs of nature are circumscribed and limited, and often anthropocentric. Moreover, our dominant constructs shape our engagement with all parts of nature (inclusive of both abiotic and biotic elements). We cannot change our engagements towards nature until we deconstruct and reconstruct our obscured and overlooked ways of conceptualizing nature.

As is evident from the brief etymological review at the beginning of this section, and as I explained in terms of water in chapter two, the idea of nature has evolved several times in the past seven hundred years through historic and social processes. Against White's thesis that Latin Christianity is the root cause of the anthropocentrism of modern and post-modern culture, the epistemological transformations that emerged from the Scientific Revolution and the Enlightenment are commonly recognized by scholars as introducing—or more realistically amplifying—dualistic and anthropocentric constructs of nature that sanction destructive and exploitative engagements by humans with all of nature. In addition, I examined the transformations that were due to two major shifts in how nature was socially constructed in the West, which occurred in the nineteenth and twentieth century. Having discussed the development of post-modern social constructions of nature, the next task is to explore responses to the dualistic and anthropocentric constructs by ecotheologians.

Responses from Ecotheology

In this section, I review groups of responses to the circumscribed construction of nature by ecotheologians and identify ones that are the most promising for ecotheology. My aim is to explore show a variety of ecotheological scholars' responses to White's challenge—to make visible the social constructs and worldviews about nature, and then to "rethink and refeel" nature in more ecologically positive constructions. I will not look at all approaches. Rather, I will be giving attention to ones that best speak to the particular concerns of water-focused ecotheology. In addition, I will keep the focus on how they reconstruct nature, and therefore this section will not address the full "vision" of any theologian's ecotheological project.

There has been a wide variety of new construct of nature proposed by academics and activists alike, such as Thomas Berry, Ernst Conradie, Celia Deane Drummond, Jay McDaniel, and Rosemary Ruether, I would say that the most meaningful/transformational reconstructions of nature are those which reimagine nature as having intrinsic worth, as relational, and overturn conventional constructions of inanimate, physical world, separate and unspoiled space, or stockpile of raw material. For example, Paul Santmire has worked to find a reconstruction of nature that reconfigures our relationship to nature, "to celebrate the integrity of nature, apart from human-centered values."[68]

In terms of their social construction of nature, stewardship ecotheological approaches have remained conservative, such as those found in Kearns's Christian stewardship type. They retain the ontological division between humanity and nature. One strategy that is employed to reimagine nature in more wholistic terms is a shift to theo-centrism, and therefore understand nature as belonging to God, and God bestowing the role of caretaker on humanity. Yet, the

[68] Santmire, *Behold the Lilies*, 6.

dualism and anthropocentrism remain. Even if humanity is reduced in rank from monarch to steward, this ecotheological approach still understands nature and humanity as ontologically different not as co-constituent or interrelated.

It is good that there have been a wide variety of voices contributing to the conversation on ecotheology as there Christianity has an even wider variety of doctrine and praxis. As we saw in chapter two, because there are many varieties of ecotheological Christians, it is necessary for there to be many viable constructs of God, humanity, and nature. For ecotheological Christians to be effective in their water-focused environmentalism, they will need to have a strong prophetic voice, what Walter Brueggemann described as a voice that calls the community to account and also imagines a future previously unseen that the community may redirect itself towards.[69] Such a voice will emerge from communities that have worked through their foundational conceptual frameworks and constructs. They will have questioned applicability of a construct to their community, and its adequacy as a meaningful conceptualization of nature, this is whether it is a usable and adequate conceptual tool. It is advisable that ecotheological Christians clearly denotes the meanings behind their terms for nature. The community must anticipate the ambiguity intrinsic in Euro-western usage and declares its position. This is especially important in terms of whether humankind is understood to be a constituent part of nature.

Ecotheological Christian REMOs and scholars might begin their process of reconstructing their constructs so that they are coherent, respectful, and meaningful. It is only from this foundation that ecotheological Christians can author and communicate alternative narratives, which use reconstructed constructs of nature, that generate social change. Several

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[69] Walter Brueggemann, *The Prophetic Imagination*, 2nd edition (Minneapolis: Fortress Press, 2001), 14.

pitfalls may be avoided if ecotheological reconstructions are explicit, (2) pluralistic, (3) affirming the integrity and independence of nature, and (4) look for alternatives to mechanistic, idealistic, and instrumental constructions of nature. White's challenge was to reimagine Christian doctrine so that it would support a worldview in which nature was intrinsically valuable, not instrumentally central to the marketplace and the recreation of Euro-western lifestyles. However, responses by ecotheology need to be more than just looking for alternatives to a dualistic and mechanistic construct of nature, but rather getting past idealized or instrumentalized nature.

There has been a wide variety of new constructs of nature proposed by academics and activists alike, such as Thomas Berry, John Cobb, John Haught, Dieter Hessel, Sallie McFague, Rosemary Ruether, and Paul Santmire. One that has been prolific and widely adopted by Christians, congregations, and denominations is the stewardship approach. Stewardship approach has strengths in being highly accessible to many Christians, in particular more conservative Christian who may be suspicious of more unconventional metaphors.[70] What is promising in the stewardship approach is its retrieval of God's absolute ownership, blessing, and valorizing love of nature (the created world), and the subsequent necessity of a creation-care ethic of creation that demands protection, conservation, and self-restraint on the part of human beings. However, the stewardship approach doesn't overcome dualism, materialism, anthropocentrism.

[70] Alongside the stewardship approach, also notable that the Natural Law approach, which is similar in that it has an is/ought, and therefore guides action. However, the Natural Law approach is less able to say what nature actually is, in particular how humanity might distinguish between different species, and between different environments (habitats).

In addition, if many of the Christians now engaged in religious environmentalism are more traditionally oriented, it is useful for a reconstruction of nature.[71] The stewardship approach is theo-centric. I would argue that some of the work of stewardship is well thought out, such as Cal DeWitt. DeWitt does not merely replace dominion with stewardship, he reconstructs nature as having integrity, autonomy, and he also understands humans as "at home" in nature. Thus, DeWitt gives a strong sense of how humans are to engage with nature.

Likewise, the cosmological approach, sometimes called the creation spirituality approach, doesn't overcome conventional ways of understanding nature.[72] It often ignores nature as more than idealized land. The cosmological approach does somewhat successful give focus to the interconnectedness of creation, as well as understanding nature as agent in its own right. However, while the cosmological approach has little ontological dualism, and understands humans as one organism exiting within a larger community of organisms, this reconstruction is problematic because it imagines nature as closed system, which isn't supported scientifically.[73] Additionally, while its intention to develop a sweeping worldview that may function as counternarrative, creation spirituality ecotheological approaches have not address the reality of nature as immediate and contiguous. This is all the more important as urban spaces increase in size in the twenty-first century and encroach on the habitats of non-human animals. A more productive reconstruction would be to imagine humanity living within nature rather than separate from pristine, remote nature.

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[71] Indeed, an early criticism of feminist theology from outside the context of the United States and Europe was that there was too much theorizing, and too little praxis. Liberation theologians have been especially critical of the irrelevancy of theological reflections originating within the academy to the poor and the marginalized. For a more detailed discussion, Heather Eaton has addressed this in her chapter "Woman, Nature, Earth," in *Religion, Ecology and Gender: East-West Perspectives*, eds. Sigurd Bergmann and Yong-bok Kim (Münster: LIT Verlag, 2009), 7–22.
[72] Kearns places the work of Thomas Berry and Matthew Fox in her Creation Spirituality category.
[73] Peppard*,"*Denaturing Nature," 109; Celia Deane-Drummond, *Ethics of Nature* (Oxford: Blackwell, 2004), 36.

In terms of their social construction of nature, stewardship ecotheologians have remained conservative. They retain the ontological division between humanity and nature. One strategy that is employed to reimagine nature in more wholistic terms is a shift to theo-centrism, and therefore understand nature as belonging to God, and God bestowing the role of caretaker on humanity. Yet, the dualism and anthropocentrism that White has challenged ecotheology to confront, rethink, and eradicate have not be fundamentally addressed.[74] This is because, in the stewardship approach, nature is still understood as in either idealized or instrumental terms. Nature is either the non-artificial, meaning a space that is separate and unmodified by humanity, or a storeroom of raw materials that humanity must harness, husband, or preserve. Even if humanity is "demoted" from monarch to steward, the stewardship ecotheological approach still understands nature as being ontologically different, and without agency, telos, or intrinsic value.

It is advisable that ecotheological Christians clearly denotes the meanings behind their terms for nature. The community must anticipate the ambiguity intrinsic in Euro-western usage, and declares its position. This is especially important in terms of communicating whether nature and humankind is understood having a shared rather than separate ontology, and that nature is understood as existing in its own right, with its own relationship to God.

It is easy to set aside the more traditional stewardship approach in favor of the widely valorized creation spirituality approach as the latter seems to be more ecological. However, doing so would be problematic from the standpoint of ethical norms. The radical equalitarian ethic of Creation spirituality actually makes it difficult to understand relations between nature and humanity. How are we to prioritize any one habitat or species against any other? And are we

[74] White, "Historic Roots," 1206 and Lynn White, Jr., "Continuing the Conversation" in *Western Man and Environmental Ethics*, ed. Ian Barbour (Menlo Park, CA, Addison-Wesley, 1973), 62.

to expect ethics actions from nonhuman animals? The stewardship ethic, which it is too focused on humans, does have a basis for norms. While stewardship approaches have been well received in denominations and are better than nothing, many find that they are ultimately lacking because they still retain their strong ontological dualism between nature and humanity.[75] For feminist and liberation theologians, who have identified the connections between systematic oppression and the dualism of nature/human, a stewardship ethic does not overcome its connections to patriarchy. Other ecotheologians, such as those who ground themselves in process thought, have sought to push further to reconstruct nature and nature-human relations in non-dualistic ways.

The stewardship approach seeks a way to understand humanity's role with nature, and its responsibilities to non-human animals and air, water, and land. Conradie, and others who are part of the ecological hermeneutics approach, find the stewardship approach to be able to account for human sin, and the larger more systemic ecological destruction that post-modern, Euro-western culture allows. For example, Conradie suggest a restructuring of human relationship not to creation but to Creator.[76] Rather than an ethic of stewardship, Conradie suggests an ethic of preparation, that is preparing for the future when Heaven and Nature meet. Hence, Conradie proposes that an eschatological approach is most appropriate to ecotheology.

Ecotheology Constructively Reimagined Nature

In this section, I will look at the work of Jurgen Moltmann, Sallie McFague, and John Cobb, as representative of ways that ecotheology has more creatively reimagined nature.

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[75] There are other objections to the stewardship ethic, such as that of Paul Santmire, who argues that *stewardship*, while it advocates for careful custodianship of the natural world for the sake of humanity at large as well (in more conservative forms) as for the sake of poor (in its more progressive forms), does not challenge fundamental assumptions of capitalism or accumulation of wealth and power, which Santmire asserts are at the heart of ecological crisis. See H. Paul Santmire, "Partnership with Nature According to the Scriptures: Beyond the Theology of Stewardship" *Christian Scholars Review* 32, no. 4 (2003): 381–412, n. 5.

[76] Conradie, *Ecological Christian Anthropology*, 176–178, 195–196.

I will look at the work of Moltmann because Moltmann was one of the earliest ecotheologians, and is widely appreciated by ecotheologians, notably those who would seek to retain traditional doctrines such as trinity, incarnation, and eschatology. Much more significantly, Moltmann, unlike many ecotheologians, has given focus to nature itself rather than the character of the God-nature relationship, or nature as a part of a theological anthropology. Next, I will examine the work of another early pioneer, Sallie McFague, who also addresses feminist and liberation concerns as well as being one of few theologians to understand of the importance of discussing economics.[77] I have chosen McFague's reconstruction of nature as it is both very creative and willing to significantly reimagine nature while preserving distinctively Christian stances. Lastly, I will look at Cobb's work on nature. While they share the starting point of a panentheistic construction of God, John Cobb's reconstruction of nature goes further than either Moltmann and McFague, and in my opinion, is the most successful of the three in overcoming dualism, anthropocentrism, and individualism. In addition, because Cobb is grounded in the metaphysics of process thought, which understands nature as comprised of entities in process rather than material substances, Cobb's reconstruction of nature is the most able to undertake the challenge of water-focused ecotheology. For several reasons, water does not conform to conventional ecological categories.[78] As such, Cobb doesn't need to overcome nature as separate or pure because Whitehead's metaphysics understands reality in terms of event and process, not substance and location. Just as humanity is distinguished from other organisms such as plants or insects as having greater complexity, particular spaces in the world can be distinguished as

[77] Mary Grey and John Cobb have also addressed economics and ecotheology.
[78] For example, water is not alive by conventional understandings. Also, water at different scales has divergent identities, such as for example the water vapor of the North American jet stream and the flows of the East Australian Current. Each is part of the water cycle but their particularity makes them quite different environmental entities.

having more complexity. For example, the complexity of urban spaces may be distinguished from others and appreciated due to a greater array of materials or due to the vastly greater number of interdependent and interconnected relationships between humans, nonhumans and other entities. In addition, Cobb's reconstruction of nature is more coherent scientifically than that of Berry and others who depend on Lovelock's Gaia hypothesis.[79]

JURGEN MOLTMANN

Moltmann views the challenge of the ecological crisis for post-industrial Euro-westerners as that of revitalize our engagements with the natural world. For Christians, Moltmann argues, before they are able to revitalize relations with nature, they must first confront anti-ecological conventional worldviews through a self-critical reworking of two traditions: the doctrine of creation and the absolute transcendent of God. In his work prior to *God in Creation*, Moltmann had argued for a return to understanding God from triune and messianic perspectives.[80] In his ecotheological work, Moltmann sees himself as integrating ecological concerns into this prior work through the development of a new doctrine of creation, which reconstructs nature as relational, intrinsically valuable, and mutable. Moltmann understands his reconstruction to be a

[79] As I noted earlier, the Gaia hypothesis rest on the premise that natural systems (or organisms) maintain an equilibrium and are closed. Yet, the foundational assumption that natural systems maintain a state of equilibrium has not born out. Rather, many natural systems display non-equilibrium dynamics, instability, and variation. In addition, many biophysical systems are open rather than closed. Cultural geographer Owain Jones discusses this problem in Jones, "Nature-Culture," in *International Encyclopaedia of Human Geography*, eds. Rob Kitchen and Nigel Thrift (London: Elsevier, 2009), 309–323, in his discussion of "new ecologies" but he does not cite any source material. Judy Meyer discusses the conventional view of nature as equilibrium as circumscribed and proposes five alternative concepts. See Judy L. Meyer, "The Dance of Nature: New Concepts in Ecology," *Chicago-Kent Law Review* 69, no. 4 (1994): 875.

[80] *God in Creation* was first delivered in the Gifford lectures, in 1984–85, and published in 1985.

corrective to the dismissive naturalism of modernity and an indifference to nature by much of modern theology.[81]

For Moltmann, nature is not the mechanical, inanimate material world nor the unspoiled, distant realm of nonhuman animals. As such, Moltmann rejects the term *nature* as objectifying, and argues that it is only in understanding the natural world in relational terms that we can find an ecological doctrine. Thus, he adopts the term *creation*, by which he means the ecosphere as a whole, and decidedly as created by and belonging to God. Moltmann distinction between *nature* and *creation* are significant. For Moltmann, *nature* is fallen and corrupted, whereas *creation* is the natural world that has been redeemed and it is where heaven and earth meet as a new, wholly redeemed world. This can be seen when Moltmann states, "nature means the reality of that world which is no longer God's good creation and is not yet God's kingdom."[82]

Moltmann contends that *creation* is "the community of all creatures with one another and God" and not simply the totality of the world apart from God.[83] What Moltmann means is that humanity and nonhuman nature (abiotic and biotic) are on equal footing. Thus, creation is a unified, organic whole that is interdependent and coherent, and human beings are created beings that "dwell" alongside other created non-human beings. Additionally, nature, being God's creation, is where the Holy Spirit is present and indwelling. For Moltmann, to reconstruct nature as God's Spirit indwelling with the creation is to understand nature as whole, interdependent, and harmonious. Additionally, he reconstructs nature as inclusive of humanity, stating that "the

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[81] Jürgen Moltmann, *God in Creation: A New Theology of Creation and the Spirit of God* (Minneapolis, MN: Fortress Press, 1993), 170, 181. Moltmann's approach to ecotheology is noteworthy for recognizing the centrality of reconstructing nature; it is more common within ecotheology to begin with God or theological anthropology. Many ecotheologians take the God-world relationship as their starting point and fail to explore the social construction of *world*, or its variants, such as *the natural world, the earth, or nature* in the sense of the totality of the material world.
[82] Moltmann, *God in Creation*, 59.
[83] Moltmann, *Creating a Just Future*, 57.

human being does not *confront* nature: he himself is nothing other than one of nature's products."[185] Moltmann grounds his reconstruction of nature as creation in a reinterpretation of Genesis 1.[84] Moltmann states that traditional exegesis has incorrectly thought of the narrative as centering on human beings as created in the image and likeness of God, which has wrongly conferred a special role on humanity. Moltmann explains that, read correctly, the subject of the Genesis text is quite clearly God's creative activity. Moltmann also finds the sabbath to be important because it tells us about God's relation to the whole of creation in a different way. The sabbath signifies the dwelling, the resting within God's household, which is the whole of the created world. Thus, the creation of the seventh day is the pinnacle moment, not the sixth. This reinterpretation shifts the nature-human relation from that of domination to that of equality and mutuality, as nature and humanity are fellow created entities.[85]

In addition, Moltmann goes on to connect the motif of household, which he points out shares the Greek root *oikos* with ecology, to the dwelling of God in the created world. Other theologians, such as Ernst Conradie, have given the metaphor of nature as household of God much more attention.[86] Moltmann's priority is to reclaim the awareness he states has been lost by modernity that God's Spirit is continually dwelling in the creation. In doing so, Moltmann is reworking the traditional understanding found in the Hebrew Bible of God's dwelling in the Tabernacle, and later in the Temple, such that God's dwelling is unlimited and permeates the whole of the cosmos. Moltmann writes of the deeper meaning of sabbath by stating, "The works

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[84] By Genesis 1, I mean Genesis 1:1–2:4a, which is the younger of the two creation narratives in the Book of Genesis. The second creation narrative is commonly identified as Genesis 2:4b-25.
[85] Moltmann, *God in Creation*, 3, 73, 138–39.
[86] Ernst M. Conradie, *An Ecological Christian Anthropology: At Home on Earth?* (Aldershot, UK: Ashgate, 2005), 6–9, 61–66. See also Ernst M. Conradie, "The Whole Household of God: The Use of the *Oikos* Metaphor in the Built and the Non-Built Environment," in *Nature, Space and the Sacred*, eds. Sigurd Bergmann and Heinrich Bedford-Strohm (London: Routledge, 2016). doi-org.ccl.idm.oclc.org/10.4324/9781315248318.

of creation display in God's acts the Creator's continual transcendence over his creation. But the sabbath of creation points to the Creator's immanence in his creation. In the sabbath God joins his eternal presence to his temporal creation and, by virtue of his rest, is there, with that creation and in it."[87] Further, by connecting God's dwelling with Genesis 2:3, Moltmann is reconstructing nature as the place of God's rest and continuing creative activity in the world. Moltmann has also reinterpreted sabbath as not only the remembrance of the creation event, that is the narrative of God taking his rest and regarding all that he has created, but also a promise that looks forward to the end of time to God's eternal sabbath, which is the new creation. Thus, nature—the community of creation as a place of indwelling Spirit—is for Moltmann immanently related to God.

In centering his reconstruction of nature and the God-nature relationship on sabbath, Moltmann makes a very significant shift. The Genesis 2:3 has traditionally been understood as a narrative concerning the material origins of nature and humanity, and therefore it establishes the proper role for humanity over nature.[88] Moltmann's reinterprets the Genesis text in terms of relation and function by exploring what God's activity and purpose in the culminating act of Genesis, meaning the act of blessing and hallowing the sabbath, and then resting in it. Moltmann explains that the sabbath reveals the relation between God and creation as panentheistic and the function of creation, which he explains "exists *before* God and *lives* with God."[89] The sabbath memorializes the creation event, which is then recreated through the practice of observing the

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[87] Moltmann, *God in Creation*, 286.
[88] Genesis 2:3 NRSV reads as follows: "So God blessed the seventh day and hallowed it, because on it God rested from all the work that he had done in creation."
[89] Moltmann, *God in Creation*, 279. Note that God's rest in Genesis 2:3 does not have to be read as inactivity. The verb in the passage is s*havot* (often spelled shabbat), which has a sense of concluding an activity. But s*havot* can also have the sense of turning toward a different activity, such as a commencement ceremony. An interesting discussion of this can be found in Matthew Haynes and P. Paul Krüger, "Creation Rest: Genesis 2:1–3 and the First Creation Account," *Old Testament Essays* 30, no. 3 (2017): 663–683.

sabbath. But the Genesis text is also indicating more than a cessation of work, more than repose or leisure. Moltmann explains that God takes his rest *in* creation.[90] Moltmann is drawing attention to the radicalness of the text that we are so familiar with that we cannot see it for what it is. Genesis 2:3 tell of the presence of God in creation at its commencement, making the whole of the creation God's resting places. Moltmann goes on to connect the symbol of God's rest with the larger sabbath tradition, the Jubilee year, the symbol of liberation from work in the Exodus from Egypt, and Jesus' controverting of sabbath in the synoptic gospels. Moltmann's reconstruction of nature, as God's creation and resting place, transforms the conventional construct of nature as separate and unrelated to God to that of a community of creation that participates in God's creative-sustaining-redeeming activity through God's sabbath presence.

In addition, Moltmann's reinterpretation of Genesis 1 goes further by affirming the mutability of nature in the continual celebration of God's first creation through observing the sabbath. Moltmann calls the first creation, *creatio originalis*, whereas the continual creation is *creatio continua*, and the final creation is *creatio nova*.[91] Moltmann notes that scientific conceptualizations of reality are evolutionary, and therefore his ecological doctrine of creation is coherent to science. Moltmann explains that the creation is not a onetime event but is continuous, and reaches out into the future, to a culmination of time when heaven and earth are redeemed and rejoin God. Moltmann explains that the Genesis 1 narrative not only accounts for the origins of the cosmos or the exile of humanity from Eden, but also anticipates the future of the created world to the end of time when the creation is reunited with God.

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[91] Moltmann, *God in Creation*, 206–214.

Moltmann's work is an important contribution as it both challenges traditional understandings of God as transcendent and impassible, while not forgoing the triune and messianic character of Christianity. Moltmann's reconstruction of nature is deeply rooted in his long-time focus on eschatology and trinity, and he understands his ecotheological project as a response to the eco-crisis from the standpoint of modern, Christian theology. Moltmann has reconstructed nature as non-dualistic, non-anthropocentric, and the God-World relationship is likewise non-dualistic. Moltmann's work understands nature in terms of interconnection/interdependence, purposefulness (telos), and nature having its own being and even agency. Moltmann's reconstruction does go past much of the stewardship approach, which finds value in nature mainly through God's mandate to love nature, and God's absolute ownership of nature. In addition, Moltmann addresses some social justice elements of ecotheology, mainly in later works. Moltmann's reconstruction reimagines nature as participating with God rather than being the object of God's creative action and ownership. While Moltmann's work is significant and fruitful, it is important to note that Moltmann claims that his approach engenders a reverence for life. However, this reveals a weakness of Moltmann's work, for in equating nature with life (being) he is not addressing the abiotic elements of nature. Moltmann's work is also troubling because he defines fallenness in terms of decay and death.

SALLIE MCFAGUE

One of the most intriguing reconstructions of nature, McFague is also significant because she is able to address ecology, social justice, and economic justice while remaining relevant to traditionally minded ecological Christians by addressing, and sometimes reworking, immanence, soteriology, and redemption. Unlike Moltmann and Cobb, McFague is very conscious/explicit that her reconstruction of nature as God's body is a thought experiment, which is part of her

larger theological work that she has described as heuristic.[92] McFague's prior work before taking up ecotheology was in addressing sexism and nuclear proliferation. As a further expression of what she calls metaphorical theology, in which McFague had reimagined God as mother, lover, and friend, McFague turns to the metaphor of body, and conceives of the relationship between God and nature as panentheistic.[93]

McFague's overall project is to address the dual crises of economic injustice and ecological degradation. McFague weaves several approaches together to reconstruct nature as an interconnected/interdependent, relational community of beings. Emerging from her previous constructive work reimagining God through the metaphors of mother, friend, and lover, McFague suggests the metaphor of "the universe was God's body, God's capable presence in all space and time."[94] One of McFague's primary purposes in reconstructing nature as God's body is to change how we see bodies, and therefore how we value "the material creation."[95] In her model, McFague explains that humans are deeply interrelated with the natural world, and vice versa. Further, God is immanent in nature, and therefore profoundly related to nature. What is more, God is related to the whole of creation not just humanity. In this point, McFague is trying to work through the problem of God's transcendent at the expense of immanence. McFague argues that the hierarchical dualisms, such as mind/body, spirit /world, and male/female are overcome through the metaphor of embodiment. In addition, McFague states that her construction of nature as God's body connects and resonates with the "common creation story"

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[92] McFague, *Models of God*, 35–40.
[93] McFague based her panentheism on the work of Charles Hartshorne, under whom John Cobb had earlier studied.
[94] Sallie McFague, "Imaging a Theology of Nature: The World as God's Body," in *Liberating Life: Contemporary Approaches to Ecological Theology* (Eugene, OR: Wipf & Stock Publishers, 2007), 211.
[95] Sallie McFague, "Life Abundant: Rethinking Theology and Economy for a Planet in Peril," *The Journal of Religion* 84, no. 2 (2004): 43–45.

found in the physical sciences. Thus, McFague contends that her model better reflects contemporary science.

For McFague, nature is an organic whole that is comprised of interrelated and interdependent beings. McFague writes, "The natural world is not a singer entity but a marvelously rich, multidimensional, diverse, and intricate collection of life-forms and things."[96] And therefore humans are deeply interrelated with the world, and are embodied—so that they may be "at home on the earth." McFague wants to reconstruct nature, change the hierarchical dualisms of body/spirit, woman/man, world/God, and as part of a larger project of reconstructing relations between God, Nature and humanity, as well as challenging conventional ideas of embodiment, incarnation, and redemption.

McFague argues that nature understood as the body of God is the only way to overcome dualism and patriarchy. "God would not be transcendent over the universe in the sense of external to or apart from, but would be the source, power, and goal—the spirit—that enlivens (and loves) the entire process and its material forms."[97] McFague writes that she wishes her readers, "to think and act as if bodies matter. They are not all that matters but they do, and if we believed they mattered and understood in detail what that belief entailed, how might that change our way of being in the world?"[98]

Because she wants Christians to transform their thinking, Sallie McFague has reconstructed the natural world as God's body. But, according to McFague, this is also a way to get Christians to think beyond their individual salvation and consider the salvation of the natural world, because what happens to God's body would be what is happening to God. McFague is

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[96] David B. Lott, ed. *Sallie McFague: Collected Readings* (Minneapolis, MN: Fortress Press, 2013), 136.
[97] McFague, *Body of God*, 20.
[98] McFague, *Body of God*, viii.

pushing her reader to go beyond the traditional, dualism of mind/body and encouraging us to see the body (human and non-human) as worthwhile. McFague argues that reconstructing the natural world as God's body confronts Christians with their "sojourner sensibility", by which she means the traditional position of Christianity to think of themselves as "not at home on the earth."[99] By imaging nature as God's body, McFague claims that nature becomes "our only and beloved home."[100] McFague also thinks that her reconstruction directs the gaze away from the traditional focus on God-humanity relationship. In addition, McFague reclaims Trinity. McFague is still interested in Christology, and soteriology. Also, seems to embrace prophetic and sacramental theology. Thus, for McFague, through the deliberate metaphor of embodiment, nature is reconstructed as active, self-moving and in process.

JOHN B. COBB, JR.

John Cobb's reconstruction of nature is based on Whiteheadian cosmology, which understands reality not in terms of substance or matter but in terms of events. For Cobb, one of the primary tasks of an ecotheology is to reject mechanistic, deterministic, and vitalistic constructions of nature, which Cobb understands as being central to the devaluation of nature in the nineteenth and twentieth centuries. Cobb seeks to overcome the dualisms of life/matter, mind/matter, subject/object. Thus, for Cobb nature is an interconnected and interdependent whole, which is comprised of communities of actual entities, and is characterized by relationality, contingency, purpose, and intersubjectivity. Unlike convention constructs of nature, Cobb understands nature as purposeful, by which he means that all actual entities are directed toward greater richness of experience. In addition, nature is neither subject nor object but characterized by intersubjectivity.

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[99] McFague, *Body of God*, 102.
[100] McFague, *Body of God*, 102.

As all of reality is comprised of actual entities, there is no dualism between humanity and nonhuman nature. Additionally, there is no sharp distinction between living and nonliving things. In contrast to Deep Ecology, Cobb disagrees that humanity should be understood as relatively indistinct among the other species on the planet. Cobb argues that humanity is distinct within nature not due to a superior or consecrated character but rather due to the highly specialize abilities, such as written language and the collaborative character of the hunter-gatherer economy. Deep ecology imagines that its radical non-hierarchical construction of nature imparts intrinsic value to nonhuman nature. However, Cobb challenges this assessment by contending that such a construction of nature empties it of norms. Cobb argues that the Whiteheadian understanding of nature as a community of mutually constitutive, interdependent entities offers a stronger ethical valuation of nature. Additionally, for Cobb the biblical prophetic tradition offers an ethical framework that is not dependent on ontological dualism.[101] The systemic economic, political, and social structure that enable and perpetuate ecological destruction can be challenged not by demoting humanity to one species among all others, as Bill Devall, George Sessions, and Arne Næss have proposed, and therefore ignoring rather obvious differences in capacity for modifying and damaging shared habitats, but rather by reconstructing humanity as intersubjective person-in-community, who is interdependent. As humans are a part of nature, Cobb rejects a role of humanity as caretaker, neither steward nor vice-regent. Instead, Cobb sees humanity as co-evolving participant with the natural world, and as having a duty to love the natural world as neighbor.

[101] The biblical prophets, including Jesus Christ, continually contest sin, transgression, and inequity, which may be understood respectively as moral failure, breaking of trust, and personal and system injustice. The prophets point to the highest good as being the love of God and neighbor. Thus, the failure to love God, such as worshipping idols or material wealth, and the failure to love one's neighbor, such as polluting common waters, are sin.

In addition to his criticism of the idea of nature as machine or material object, Cobb rejects an idea of evolution as a ruthless drive towards survival, which has been misappropriated by political and economic theorists to valorize competition as a social good.[102] Instead, Cobb interprets evolution as a mutually constitutive process. Species neither shape nor are shaped by their environment but co-evolve with their environment. Thus, no organism can be understood apart from its environment, which makes conceptual abstractions of nature commonly in Euro-western culture, such as "material substance" and "naturel resource," unworkable.

For Cobb, nature is infused with God's Spirit, and therefore fully participates with God's immanence. In Process thought, God is dipolar, which means that God has not one nature but two. In God's primordial nature, God is transcendent. In God's consequent nature, God is immanent. It is through God's consequent nature that God participates in all occasions of experience, and provides creativity, and a lure towards the best possibilities. It is in this way that Cobb is able to overcome the problem of God's transcendence over the world. Having discussed several provisional tenants for constructs of nature, the next task is to discuss my alternative constructs of nature.

Further Alternative Constructions of Nature for Water-focused Ecotheological Christians

Here, I offer three alternative constructs of nature. Unlike ecotheologians in the prior section, my reconstructions are directed both to water studies and ecotheology. For the larger ecological conversation on water crises, the value of exploring an explicitly theological reconstruction of nature offers three main results. First, it is a necessary precursor to a reconstructing water. Second, as it shows the incongruity between the dominant Euro-western construction of nature

[102] Birch and Cobb, *Liberating Life,* 112–116; Herman Daly and John B. Cobb, *For the Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future* (Boston: Beacon Press, 1989), 49, 236–7; Walter Brueggemann, "Preaching as Reimagination," *Theology Today* 52, no. 3 (October 1995): 317. doi.org/10.1177/004057369505200302.

and the idea of nature in the biblical tradition, it instigates a reconstruction of nature that is nondualistic and eco-centric. Third, by exploring other views of nature that predate the dualism of the Enlightenment, it provides alternative possibilities of how nature might be reconstructed. Both of these may lead to a confrontation and dis-mantling of the dominant constructions of nature.[103] For Christians, an explicitly theological reconstruction similarly reveals the incongruity between dominant contemporary constructs of nature and the biblical idea of nature. Moreover, the incongruity indicates that Euro-western constructions have been read into the biblical texts by ninetieth and twentieth century interpreters, as ecotheologians H. Paul Santmire and Theodore Hiebert have shown.[104] For Christian theists, identifying the incongruity between the dominant and the biblical idea of nature leads to a third result. It invites Christians to revise theological doctrines that depend on mistakenly reading dualism and anthropocentrism into the biblical corpus.

Before any further discussion, I want to bring to attention to a lexical matter that has not been articulated enough within ecotheology. The word *nature* as we use it today–nature in the sense the entire world inclusive or exclusive of humanity–has no equivalent in Hebrew Bible and New Testament.[105] Perhaps because many ecotheologians and biblical scholars have often focused first on humanity, or perhaps because scholars have not questioned the constructed

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[103] I have used a hyphen here to emphasize my meaning, which is the disrobing and confrontation of a mantle of authority given to dominant constructions of nature as a separate, unspoiled, or raw resource.

[104] Santmire, "Partnership with Nature According to the Scriptures," 395. Biblical scholar Theodore Hiebert does not use the word *eisegesis* but in several publications has stated that dichotomous constructions of humanity and nature were presumed by biblical scholars and other interpreters of the Hebrew Bible in the late nineteenth and twentieth centuries. For a detailed discussion, see Hiebert's "The Problem of 'Nature' in the Bible," in *The Yahwist's Landscape: Nature and Religion in Early Israel* (New York: Oxford University Press, 1996), 3–29.

[105] In the Hebrew Bible, there are two main words that are used to signify the totality of the world: (i) *eretz* (אֶרֶץ) and (ii) *adamah* (אֲדָמָה). Loosely, these mean (i) earth, land, and even country, and (ii) ground or soil. Similarly, in the Greek New Testament, the terms (a) *ge* (γῆ), (a) *kosmos* (κόσμος), (c) *oikoumené* (οἰκουμένη), and (d) *ktisis (*κτίσις). Respectively, the first three signify: (a) earth, land, ground, soil; (b) world, universe, the ordered system; (c) and the inhabited earth. The word *ktisis (*κτίσις) has a range of meanings, from the act of creation to particular created things or beings, and collectively, the whole of created things or beings.

character of nature, there are few scholars who clarify at the onset of their discourses that the nature we mean in the twenty-first century does not correspond to what the biblical authors meant when they wrote of *earth*, *land*, *world* or *creation*.[106] Additionally, while the word *nature* is found in the New Testament, it is not used to signify the ecosphere, either inclusive or exclusive of humanity.[107] Rather, as indicated above in the footnotes, several words are used to signify the ecosphere that do not carry the dichotomy between material/immaterial or nature/culture dominant in Euro-western culture. Incognizance of the constructed meanings of nature has introduced dichotomy into doctrinal and textual interpretations for at least two centuries, which persists even now.[108] Therefore, I want to make plain that the dominate Euro-western construct of nature as material substance, separate and unspoiled space, or store house of resource would be unfamiliar if not incomprehensive to the biblical authors.[109] While there is not room here, several excellent studies have shown that the dichotomy between nature and humanity, or nature and culture, originated in the early Modern and Modern periods.[110]

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[106] Likewise, there is no equivalent in the texts to what we call wilderness. Instead, there are non-dualistic terms such as *midbar* (מדבר), which denotes sparsely populated pasturelands, and *eremos* (ἔρημος), which denotes an isolated place. Jeanne Kay, "Concepts of Nature in the Hebrew Bible," in *Judaism and Environmental Ethics: A Reader,* ed. Martin D. Yaffe (Lanham, Md: Lexington Books, 2001), 88.

[107] The main words for *nature* and *natural* in first century Koine Greek were *phusis (*n.*,* nature, underlying essence or principle*)*, *phusikos* (adj., natural, inborn, according to nature), and *phusikôs* (adv., naturally, by nature). They do not correspond to the sense of nature as the totality of the world because, at the time that the New Testament was written, the Greek concept of nature was not material but essential. The two sense in which *phusis*, *phusikos*, and *phusikôs* are used in the New Testament correspond to the older senses of the term *nature*, that is (i) the unchanging character or essence of a thing and (ii) a foundational, controlling force. Perhaps this lexical complexity is why scholars in the field of ecotheology often switch from using *nature* to using the term *creation* is their discourses.

[108] Warren S. Brown and Brad D. Strawn, *The Physical Nature of Christian Life: Neuroscience, Psychology, and the Church* (Cambridge: Cambridge University Press, 2012), 11–12. doi.org/10.1017/CBO9781139015134; Theodore Hiebert, "Retranslating Genesis 1–2: Reconnecting Biblical Thought and Contemporary Experience," *The Bible Translator* 70, no. 3 (2019): 262–264. doi:10.1177/2051677019877229.

[109] Theodore Hiebert, "Retranslating Genesis 1–2," 261–263. Hiebert made this point in much greater detail in *The Yahwist's Landscape.*

[110] See Richard Bauckham, *Living with Other Creatures: Green Exegesis and Theology*; Jeremy Cohen, *Be Fertile and Increase, Fill the Earth and Master It*: *The Ancient and Medieval Career of a Biblical* Text (Ithaca, NY: Cornell University Press, 1989). www.jstor.org/stable/10.7591/j.ctvr7f72z; William P. Brown, *The Ethos of the Cosmos: The Genesis of Moral Imagination in the Bible* (Grand Rapids, MI: Eerdmans, 1999).

There are three other details to consider. First, I would like to acknowledge that there are what biblical scholar Normal Habel has termed *green texts* and *grey texts* of the biblical corpus.[111] What Habel means by green texts are text that "recognize the intrinsic value of Earth, celebrate domains of Earth, remember the sufferings of Earth, or anticipate the revival of Earth as an integral part of a renewed creation."[112] However, Habel explains that there are also grey texts by which he means texts where "nature is devalued at the hands of God or humans," that assume human interests take priority over any other concern, and that fundamentally view nature in terms of anthropocentrism and utility.[113] What Habel is attesting to is that the Bible is not a univocal witness, and that is okay. We should not expect the Bible to be otherwise. Indeed, a sober realism that the Bible contains both green and grey texts challenges us to think deeply and better understand the biblical idea of nature as an important first step of any ecotheological reconstruction. Therefore, I advocate for a hermeneutic of suspicion of all texts within the corpus. Cautious exegesis must take place if we are to properly interpret the text as well as avoid reading contemporary taken-for-granted constructions of nature into biblical texts. Moreover, it is important to appreciate the witness of the corpus as a whole, which understands nature as a unified whole that God has created for its own sake, makes covenant with, intrinsically values, and commands humans to care for and serve.

Second, it is important to state that, in the original biblical context, the idea of nature was not materialistic or dualistic. The biblical texts themselves emerged from a different cosmology

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[111] Habel was a leader of the Earth Bible team, a group of biblical scholars that produced the five volume *Earth Bible.* The *Earth Bible* is an interpretation of the biblical corpus from the perspective of the earth, published between 2000 and 2002.
[112] Norman Habel, *An Inconvenient Text: Is a Green Reading of the Bible Possible?* (Hindmarsh, SA: ATF (Australia), 2009), 115. www.jstor.org/stable/j.ctt163t8xc.
[113] Habel, *Inconvenient Text*, 115.

as well as a different approach to history and science than the post-Enlightenment one. For the biblical authors, neither nature as a whole nor the particular abiotic and biotic entities of nature are disenchanted objects or determined, inert matter. Additionally, in the biblical corpus, land is not simply dirt that humans and other animals walk over nor are freshwaters merely varied quantities of dihydrogen monoxide in a liquid state (H_2O).[114] Time and again, the text speak of the earth or the land as generative and fertile; animals and vegetation are spoken of in the same terms. Likewise, as a totality, nature is a conflagration of entities, abiotic and biotic that are sentient and have joy.[115] In addition, neither humans nor any other being is understood to be external to the world.[116] The text do often differentiate between types of animals or vegetation, or contrast between realms, such as heaven and earth. However, when contrasts are made or divergences are emphasized, they are not ontological distinctions. The biblical idea of nature is best characterized by differentiated unity rather than dichotomous realms of human and nonhuman or nature and culture.

A third and final detail to address before proceeding is the creation narrative found in Genesis 1, which has been central to how the Christian tradition came to construct nature and human, and the nature-human relationship. This narrative—usually identified as Genesis 1–2:4a—is one of two creation narratives found in the biblical corpus. Genesis 1–2:4 has traditionally been dated as having been written during the post-Exilic period, and is therefore younger than the creation narrative of Genesis 2:4b–3:24. Within ecotheology, Genesis 1:26–28 has received much scholarly attention due to verses 26–28, which state that human beings were

[114] Theodore Hiebert, "First Sunday in Creation: Forest Sunday," in *The Season of Creation: A Preaching Commentary*, eds. Norman Habel and H. Paul Santmire (Minneapolis: Fortress Press, 2011), 73–74.
[115] See Genesis 3:1–5, Numbers 22:28–30, Job 39:13–18, Job 40:20, and Psalms 104:26.
[116] Hiebert, "Retranslating Genesis," 263–264.

made in the image of God, and that human beings are to rule over (*radah)* nonhuman animals and to subdue (*kabash)* the earth.[117] Since the Patristic Period, these verses have been interpreted as indicating both an ontological and functional distinctness, which has led to constructions of human nature as unique and superior to nonhuman animals and that human beings were divinely anointed to rule over nature.[118] In service to reconstructing nature and human nature, I will be addressing Genesis 1:26–28 in this chapter and chapter six. As my discussion of it will be interwoven with my reconstructions across these chapters, and my discussion contains several strands, I will summarize my overarching interpretation of verses 26–28 with three claims. First, the verbs *rule over* and *subdue* have been interpreted with an assumption of absolute royal power that is not original to the text. Second, Genesis 1:26–28 cannot be understood in isolation from the larger narrative of Genesis or that of the biblical corpus, and therefore interpretations of the verses cannot contradict the cardinal ethical norms of the biblical corpus.[119] Third, many generations of thinkers and scholars have supposed that human superiority and dignity is dependent on an interpretation of *imago Dei* as either an ontological or functional *sui generis,* which is a false construct. While it is not settled among biblical scholars whether *imago Dei* should be interpreted through an ontological or functional lens, neither interpretation necessitate constructing humankind as superior to nature, nor is human dignity contingent on a unique essence or vocation.[120]

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[117] The verbs רָדָה, "radah" and כָּבַשׁ, "kabash" are found throughout the Hebrew Bible and are associated with the role of kings and the power to subjugate others. While the verbs do convey the sense of presiding over and controlling a land or population, interpreting them as giving unconstrained power would be a misreading. In the original Jewish context of Genesis, the authority and power of a king was contingent and limited rather than absolute.

[118] Theodore Hiebert, "Reclaiming the World: Biblical Resources for the Ecological Crisis," *Interpretation* 65, no. 4 (October 2011): 342–4. doi.org/10.1177/002096431106500402.

[119] Cobb, *Liberating Life,* 269**.**

[120] Conradie, *An Ecological Christian Anthropology*, 42.

NATURE AS GAUDIUM

On a street in my Seattle neighborhood, there is a towering evergreen tree. For many years as I walked past it as I walked my daughter to school, I wondered what species the tree was. One day curiosity got the better of me, and I searched online for a field guide to Pacific Northwest evergreens. In doing so, I happened upon a newspaper column on large trees by columnist Charles Mudede. Remarking on a colossal Alder tree in his corner of Seattle, Mudede wrote, "All trees aspire to bigness. Bigness is their gaudium—the characteristic pleasure of a particular form of life."[121] Mudede's explanation of the word *gaudium* reminded me of Whitehead's term *satisfaction*. I also realized that Mudede's words communicated the actuality of these trees in non-anthropocentric terms, while also expressing their innate integrity. Additionally, Mudede gave expression to how a human might appreciate big trees without romanticizing them, or setting them apart from culture. The gaudium of bigness is participatory, yet it does not demand a human witness.

The reconstruction of nature as gaudium offers an alternative way of understanding how living beings experience their existence. Gaudium is the joy or pleasure that a being or an entity has in its own existence. Certainly, the entities that comprise nature are interdependent and participate with each other. But, as human beings are understood as existing for their own sake, the abiotic and biotic entities of nature must be understood as existing for their own sake, and not as existing for humanity. There is a value in both the particular entities of nature and a value in the organism as a whole. In addition, nature as gaudium may also express the connectedness and regard that an observer can experience as he or she witnesses a living being in a moment of

[121] Charles Mudede, "The Sexiest Trees in Seattle: Six Carbon Creatures I'm in Love With," *The Stranger* (Seattle), June 18, 2009, https://www.thestranger.com/seattle/the-sexiest-trees-in-seattle/Content?oid=1705587.

absolute being-ness. This moves away from nature as separate or transcendent, while keeping us connected with nature as part of our joy and God's. It also redirects the gaze from anthropocentrism and individualism toward nature-as-it-is, and therefore invites a sense of connectedness with other abiotic and biotic entities that is not human-centered.

As we have seen in the previous section of the historical process that shaped the contemporary construction of nature, one of the lesser known but dominate constructions of nature is that of nature as distant and unmodified, which arose in the Romantic period and is often expressed in terms of nature being majestic, pristine, or sublime. Nature as unmodified necessitates that nature remains a hyper-separate space unspoiled by humanity's presence. While the Romantic period construct may value nature as created and beloved by the Divine, the central purpose of nature is presumed to be as a meeting place with and conduit for experiencing the Divine. However, constructing nature as a sublime space, where humanity finds restoration and communion, did not instill an ethos of intrinsic value but, ironically, produced and sustained an ethos of instrumental value; nature came to be valued (and often continues to be valued) as a medium for human experience. Indeed, when elements of nature are described by Romantic writers, so very often the daffodils, mountain tops, clouds, or trees truly function as a medium for human joy and awe rather than being understood as existing in their own right and having a value apart from human aesthetic or spiritual value.

In contrast, nature as gaudium is nature understood as existing for its own sake. Nature's purpose in its existence is independent of human dependence on it, or any usefulness to humanity. I assert that nature as gaudium is an alternative construct that deeply values nature as intrinsically worthy. In addition, it also encourages thinking of nature as inhabited by fellow subjects, namely abiotic and biotic entities. Nature as gaudium is redefining nature in terms of

existence. It is a way of appreciating nature that sees nature not as object but as subject, at least to the same extent that humanity is. In contrast to nature as dead matter without being or agency, or in contrast to nature as an aesthetic ornament or material resource.

Reconstructing nature as gaudium is consistent with how the biblical authors understood nature, that is as created by God not for the sake of humanity but for its own sake. The view of nature as valuable in its own right is manifest in several parts of the biblical corpus, such as that the God-nature relationship is not contingent on human beings, God's continuous engagement with nature, and the prohibition against abuse and exploitation of nature.[122] It is striking how often the biblical texts describe God's relation with nature as independent of humanity. In addition, four examples of how God engages with nature show that God has a purpose for nature independent of humanity and values nature. First, the creation of the ecosphere and its inhabitants is voluntary, intentional, and judicious. Second, multiple texts describe God as providing for, protecting, and tending to all living beings.[123] Third, God makes a covenant with every living being in Genesis 9 that is called everlasting. Fourth, many texts describe how God dwells in the world, participates, and even delights in interacting with nature. Indeed, God is described as dwelling in the world from the beginning of the texts, in Genesis 3, and nowhere in the texts does it say that God has withdrawn. Not only does God value nature, in many passages God sanctions human beings with the care of nature, which include both implicit and explicit mandates and prohibitions. The prohibitions against abuse and exploitation of nonhuman entities are especially notable as they show that God values nonhuman animals, vegetation, and the land

[122] It is worth pointing out that, unlike other creation narratives of the Ancient Near East, neither the Priestly nor the Yahwist narratives suggests that neither humanity or nonhuman animals were created to serve God through labor or doxology.
[123] For example, God's providence is shown in passages such as Leviticus 26:4, Psalm 147:8, Matthew 5:45 and 6:25–34.

as ends unto themselves. These commandments preclude humans from benefiting from nature at the expense of it, such as Exodus 20:10, Deuteronomy 20:19–20 and 25:4. Some texts, such as the story of Balaam's donkey (Deuteronomy 22:6–7), necessitate humans putting the interests of nonhuman animals over their own. If God's commandments regarding the care of nature were limited to those that simultaneously advantage human interests, or merely did not disadvantage human interests, then the biblical view of nature would be rightly understood as utilitarian. The rich witness of the biblical corpus reveals the view of nature original to the texts is one that conceptualizes nature as intrinsically valuable to God and existing for its own sake.

NATURE AS WITHOUT BOUNDARIES

Many authors and scholars have suggested home or household as a pro-ecological reconstruction of nature. They have written that a sense of place has been missing for Euro-western culture. Nature is not conceived of as a place that human beings are connected to or embedded with. Several authors have connected the words ecology and *oikon*, which is the Greek word meaning house or dwelling, and is also the root of economy and ecumenicism. While appealing, I believe that this is a blind alley. As I discussed earlier in this chapter, the construction of nature as a space set apart from cities and farms, is deeply entrenched in the Euro-western ethos. As I stated above, the Enlightenment's reconstruction of nature as inert matter that was rightly the object of empirical enquiry by the (superior) immaterial human mind. The natural world increasingly became the realm of useful material to be harnessed by human culture. In the Romantic period, the divide between how natural and cultured spaces were conceptualized grew wider, and increasingly nature came to be defined as being a separate, distant space that is not where we reside and is transformed by human presence, perhaps even tamed. In Euro-western culture, authentic nature—usually characterized as "the wild"—is visited. We return to our true home when we return to houses and apartments in what we call "civilized spaces." However, in not

challenging this construction, we are not acknowledging that our homes are embedded within the larger sphere of nature. What we see as separate space is a habit of mind based on the Euro-western construct of nature as unmodified, separate space or deracinated, inert matter.

Alfred North Whitehead exhorted that "We must avoid vicious bifurcation."[124] Our habits of imagining nature usually establish boundaries that in reality are relatively recent inventions. We differentiate between urban, suburban, countryside, and wilderness. However, nature itself exists on a continuum. While there are fewer undomesticated animals within an urban area, it is still full of non-human living beings. Ecotheologian Calvin DeWitt writes about how he takes students into the urban area, where his students assume that there are only people, pets and concrete. Dewitt reveals to them that the "concrete jungles" are teeming with life. Eminent biologist E.O. Wilson has estimated that there are ten quintillion insects in the world; ten quintillion is ten with eighteen zeros after it.[125] Wilson accounts for the multitudes of small creatures that make up so much of the external, unmediated world. Insects are not usually what comes to mind when we think of nature, nor are bacteria, chemist (algae and molds), protozoa, or fungi. Insects, molds, algae, fungi, and single celled organisms live where we cannot see or do not go. Simply put, nature is everywhere.

If we conceive of nature as unenclosed, we begin to see that the boundaries that we saw as demarcating where nature begins and ends are more akin to thresholds, that is marking transitions rather than denoting ontologically different spaces. We think of nature as ending at the city limits, as a sort of *pomerium* that true nature, nature that is as yet unmodified, cannot

[124]Alfred North Whitehead, *The Concept of Nature: Tarner Lectures* (Cambridge: Cambridge University Press, 2015), 118.
[125] Neil deGrasse Tyson, Michael Strauss, and J. Richard Gott, *Welcome to the Universe: An Astrophysical Tour* (Princeton University Press, 2016), 19.

cross. Likewise, we think of our cities as having small reserves that we call parks. The perimeter tells us where nature begins and the culture is interrupted or held at bay. But anyone who lived in a city for any length of time has certainly experienced non-human life abound regardless of human boundaries. On my quiet street, which is about three miles from Seattle's downtown, we rarely see a day without crows, woodpeckers, sparrows, finches, and hummingbirds. At dawn and dusk, I often see raccoons, and I know that they are my perennial neighbors, whether I see them or not. This is also true of the many urban greenbelts and parks, where many non-human beings live alongside humans. The ratio of humans to undomesticated animals is lower than in nearby mountain ranges or rural spaces, but it is much higher than my eyes or ears would tell me. To understand even the most urban spaces as existing on a spectrum of domesticated/-undomesticated better represents reality. Moreover, such an understanding shifts awareness from human distinctiveness to human connectedness and embeddedness within nature.

Further, nature exists on both sides of the thresholds that we have constructed. We carry ecosystems on and within our bodies. For example, the human epidermis is typically home to one trillion the microorganisms, which are called skin flora or skin microbiota.[126] In addition, our intestines host tens of trillions of microbiota, which some researchers have described as analogous in size and variety to the biomass found in a rainforest or a barrier reef.[127] Reconstructing nature as existing without boundaries reclaims and reimagines the world of abiotic and biotic entitles as existing everywhere. Additionally, this construct offers a countervailing narrative to the dualism of conventional constructions of nature that have not only

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[126] *Encyclopædia Britannica Online*, s.v. "human microbiome," accessed April 06, 2015, http://academic.eb.com.ccl.idm.oclc.org/EBchecked/topic/1806911/human-microbiome.
[127] William Olds, ed. "Health and the Gut: The Emerging Role of Intestinal Microbiota in Disease," (Toronto, ON: Apple Academic Press, 2014); Bengt Björkstén, "The Gut Microbiota: A Complex Ecosystem," *Clinical & Experimental Allergy*, 36, no, 10 (Oct. 2006): 1215–1217. doi:10.1111/j.1365-2222.2006.02579.x

divorce humanity from nature but nature as ontologically different and inferior to humanity. To reconstruct nature as boundary-less is to think of all spaces as existing within nature and all abiotic and biotic entities, including humanity, are internal to nature. It is to think of cities, suburbs, and farms as "of and in" nature, which overthrows the hierarchy we have for protecting what is "unspoiled" and challenges ideas of protecting places and species based on their wild quality. There is no separation between nature and human culture nor are they distinct domains that overlap. Simply put, there is one world and humans exist within it. Nature is the place within which we live our lives.

Reconstructing nature as without boundaries is consistent with how the biblical authors understood nature. As I wrote above, the biblical authors understood nature as a unified whole. The view of the unity of nature may be seen in the similitude of substance and that both nature and human beings were created as ends unto themselves. The creation narratives of Genesis 1–2 make plain that nature and humanity not only come into being through God's creativity but are made from the very same substance, which is the "dust of the ground." Indeed, a close reading of the creation narratives of Genesis 1:26–28 reveals that, while there may be a difference in role or function for human beings, there is not an ontological distinction between nature and human beings. In addition, throughout the Hebrew Bible, there is a lack of distinction in the original Hebrew between human and nonhuman animals, which are both called *nephesh hayya*.[128] Modern English translations commonly render *nephesh hayya* as "human being" or "living being" but when *nephesh hayya* signifies nonhuman animals, they render it as "living creature."[129] Such translations reveal the contemporary dominate construction of nature as

[128] Conradie, *An Ecological Christian Anthropology*, 42.
[129] Hiebert, "Retranslating Genesis," 270.

ontologically different (*sui generis*) has been read into the texts by translators. It is in challenging our contemporary construction of humans as unique and superior to nature that we can begin to see how in the biblical texts understand all living beings as having the same material origin: the soil of the fertile earth. (Genesis 2:3 and Genesis 3:19). Further, there are many instances when the differentiations in the texts in fact indicate an underlying unity. For example, a number of passages differentiate cereal crops by their seeds, trees by their fruits, and livestock for their digestive systems. In other instances, such as in the Genesis narratives, the animals of the air, land, and seas are differentiated by habitat. Yet, the differentiation by habitats is most decidedly not a separation between human and nonhuman realms, and most certainly does not represent an ontological distinction between nature and humanity. A careful reading of the text, and one that is cognizant of the contemporary social constructions of nature, reveals that biblical view of nature as understood to be a unified whole. Thus, a reconstruction of nature as without boundaries is consistent with the biblical view of nature, and reconstructs nature in terms of continuity and mutuality and relation, not dichotomy.

In addition, the reconstruction of nature as without boundaries confronts the enclosure of God's holy spaces within nature. In the Romantic period, remote spaces unmodified by culture were constructed as sublime spaces. However, this construction of nature has inadvertently encoded an idea that God does not dwell in nature apart from remote, unmodified spaces. Such a dualism is not true to the biblical texts. In the Hebrew Bible, God is often shown as both materially present in nature and also as having a home in the world, which is most often identified as in the Temple.[130] In the New Testament, God is no longer identified with a

[130] It is worth noting that many texts in the Hebrew Bible describe God's presence as transcending location, such as 1 Kings 8:27 and Psalm 139:7–8.

particular geographic location but is instead present in the world through the incarnation of Jesus and later through the presence of the Holy Spirit. Thus, God's presence abounds in the world and the entire world is understood as God's holy space. Therefore, an important environmental and theological task is to retrieve the biblical understanding of nature as a unified whole where God dwells. A corresponding task is to recognize that as God engages with human beings, God also engages with the totality of nature, and as human beings are a part of holiness, so too is nature.

NATURE AS NEIGHBOR AND NEIGHBORHOOD

Above, I have said that two alternative ways of thinking of nature are as gaudium and as without boundaries. My third reconstruction, nature as neighbor and neighborhood, follows from my first and second reconstructions. Nature as neighbor and neighborhood recognizes that nature is sometimes defined by the types of entities that occupy a particular space but at other times is defined in terms of space and location. Thus, my third reconstruction holds these two senses of nature in dynamic tension by constructing nature in terms of both/and rather than either/or. Thus, nature is both neighbor, that is the whole of abiotic and biotic entities, and neighborhood, that is the space that is the shared home. In addition, this reconstruction suggests an alternative way to think of the nature-human relationship.

Nature as neighbor understands nature as a unified whole of abiotic and biotic entities, and human beings embedded within it. Rather than understanding the abiotic and biotic entities of the ecosphere as nonrational, determined nonhumans, as determined machine, or utilitarian resources, nature as neighbor understands other biotic entitles as living beings that are different from humans but not ontologically distinct (*sui generis*). Thus, like human beings, they exist for their own sake and have their own dignity and intrinsic value. Likewise, nature as neighbor understands the abiotic entities of the ecosphere, such as water and air, to exist for their own sake and have dignity and value. Therefore, the whole of nature is also understood as existing for its

own sake, and to have dignity and value.[131] To think of nature as neighbor is to extend to nature a way of thinking about nature theologically that has traditionally been reserved for humans. It is a relational way of thinking and considers the whole of nature as in fellowship with humanity. It reclaims the dignity of nature without rejecting the dignity of humanity because humans are different but not ontologically distinct from other biota. Nature as neighbor proposes a fundamental affinity and mutuality, and even a kinship, between all who live in the same neighborhood. Further, it suggests a continuity among and between entities residing in the ecosphere.

In addition, nature as neighborhood understands nature as a continuous space and as the space within which all entities dwell. As I stated above, some scholars have suggested reconstructing nature as a household but I think that household is too associated with human life lived at the individual or familial scale. As I will discuss in more detail in chapter six, the emphasis on individualism in Euro-western culture has been problematic. In addition, the analogy of household is inconsistent with either the original Jewish context of the Hebrew Bible or that of the first and second century Christian world, neither of which understood human beings apart from a larger community. The early-modern and modern construct of autonomous individual would have been baffling to these ancient cultures. Therefore, nature is more appropriately reconstructed as a neighborhood than household. In addition, as I previously stated, nature exists on a spectrum. Spaces vary from having, for example, higher/lower ratios of modification, being more/less hospitable to particular biota, or having higher/lower diversity of particular populations. This is similar to how we understand neighborhoods. Neighborhoods are

[131] Here, I have distinguished between nature as an abstract whole and nature as the particular entities that exist within the whole. I do this to make clear that each, both the totality and the numerous particular entities, have value and dignity.

characterized by categories such as density or demographics as much as its particular location. Moreover, spatially, all biota live within nature; no living being can exists apart from nature. We may differentiate between particular locations, with descriptions such as urban/rural or population density, but there is no place that is external or separate from nature. All biota have a particular neighborhood, and also belong to the larger neighborhood of the ecosphere. Likewise, abiotic entities are a part of particular neighborhoods whereas others, such as air and water, move through particular neighborhoods, and all abiotic entities belong to larger neighborhood of the ecosphere.

Reconstructing nature as both neighbor and neighborhood is consistent with how the biblical authors understood nature. The idea of neighbor is found abundantly in the biblical corpus, and the question of how narrowly to define *neighbor* has been debated for at least two millennia.[132] In the Hebrew and Greek contexts in which the texts emerged, the word *neighbor* has several related meanings, which are context dependent. *Neighbor* may have the sense of a people who live in close proximity to one another.[133] However, *neighbor* also has the sense of particular population or nation, and thus understands neighbor as people who share a common quality. In addition, an even more inclusive sense of *neighbor* is found in Leviticus 19 and in the parable of the Good Samaritan (Luke 10:25–37).[134] The meaning of *neighbor* is expanded from people who shares religious or cultural ties to people belonging to rival tribe, such as the

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[132] In the Hebrew, neighbor is *rea* (רֵעַ), and has the sense brother or companion, and broader sense of fellow or person in a reciprocal relationship. In the Greek, neighbor is *geitón* (γείτων) has its root in *gé*, and therefore has the sense of "from the same land."

[133] In Euro-western culture, *neighbor* also has the sense of more than "person next door." The OED gives a wide range of meanings that fall into two general categories: (i) people and communities (e.g., counties) living in near proximity to each other and (2) people, countries, and cultures and that are closely related or share similar characteristics.

[134] Richard Elliott Friedman, "Love Your Neighbor: Only Israelites or Everyone?," *Biblical Archaeology Review* 40, no. 5 (September–October 2014): 50–52.

Canaanites, or to "the one who showed mercy." (Luke 10:37) In both the Hebrew Bible and the New Testament, the relationship between neighbors presupposes respect, mutuality, and moral duty, and thus one is expected to engage with one's neighbor with integrity, honesty, and equity. In addition, the more inclusive sense of *neighbor* found in Luke 10:37) extends the moral obligation between neighbors to all human beings, and the expectation of compassion and kindness.[135] To reconstruct nature as neighbor is likewise to extend the sense of neighbor from merely a person one shares a connection or bond to neighbor as the living beings that co-inhabit the ecosphere. Reconstructing nature as neighbor extends to nature respect and dignity. Further, it reconstructs the nature-human relationship as a reciprocal and moral relationship. As neighbors, nature and human beings are obligated to treat one another as ends unto themselves rather than means to an end. Thus, nature is both a neighborhood and a neighbor entails different ethical norms than those of subject-object.

Reconstructing nature as neighbor is also consistent with the biblical sanctions for care of the ecosphere as the relation to neighbor entails an obligation of care. Above, I discussed one category of the sanctions for care of nature, which is the probation against abuse and exploitation. There are two other general categories: mandates of mutuality and mandates of justice. Mandates of mutuality are those that charge human beings to respect, share, tend, and refrain from destruction, which might otherwise be called neighborliness, husbandry, wise-use, and conservation care. For example, the mandates for jubilee years that directed God's people to give rest to the land every seventh and fiftieth year, and the rabbinic tradition of *bal tashchit,*

[135] The Samaritans were a neighboring Semitic-speaking people, also descended from the Exodus community. However, the antagonism between the communities in the first century CE Judea was strong. Thus, the parable of the Good Samaritan is establishing the obligation to love one's neighbor even if that neighbor is an adversary or contemptible.

which forbids the destruction of any object, plant, or abiotic entity that could be of use to another.[136] These mandates are in the self-interest of human beings and they also benefited nature. Mandates of justice have a steeper obligation, for they require that the neighbor, or nature as neighbor, be treated with parity and fairness. For example, in Deuteronomy 5:14, rest on the sabbath is required not just for humans but also for domesticated animals. The third category, that of prohibitory sanctions against abuse and exploitation, are obligations of more than parity. The prohibitory sanctions obligate equity, self-limiting, and even altruism. The biblical corpus is marked by an expectation of restraint from the very beginning, such as restricting humans from eating meat. In fact, God models self-restraint by making everlasting covenant with the earth in Genesis 9:13, which includes the promise to never again flood the world. Several texts explicitly require direct care of nature and self-limiting by humans, such as Deuteronomy 25:4 and Proverbs 12:10. Indeed, Hiebert and other biblical scholars have suggested re-interpretations of Genesis 2:15 obligation "to till and keep" as more accurately meaning "to serve and care for" the ecosphere.[137] Further, the several texts explicitly forbid overworking or polluting the land, such as Numbers 35:33–34. Looking to the model of God's providential and ongoing care of nature as well as the sanctions to care for nature, it is clear that the ethical norms of the biblical corpus for care of nature are comparable to the norms of love of neighbor.

Lastly, nature as neighborhood is also consistent with the biblical understanding of the ecosphere as a unified whole within which God dwells with all living beings. As I stated above, a

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[136] The rabbinic tradition of *bal tashchit* (Aramaic, meaning "do not destroy") is based on interpretation of Deuteronomy 20:19–20, which forbids the destruction of fruit-bearing trees or freshwater springs as part of any military campaign or siege, whereas the mandate of jubilee rest comes from Leviticus 25:1–13.

[137] Explaining the lexical range of the verb עָבַד (*abad*), which is usuallytranslated as "cultivate," "till," or "tend," Hiebert writes, "The basic and most common meaning of the Hebrew term … *abad*, is 'serve.' It is used to express the service of servant to master (Genesis 12:6), of one people to another (Exodus 5:9), and of Israel's service to God in its life and worship (Exodus 4:23)." Hiebert, "Reclaiming the World," *Interpretation* 65, 351. doi:10.1177/002096431106500402.

social construction of nature as a separate space that exists apart from God.[138] What is more, the biblical authors understood human culture as existing within the ecosphere rather than outside of it, and as interdependent with nonhuman animals and the land. Understanding nature as neighborhood the home that human beings share with other entities, and not the domain we are to subdue and rule over, is an important step towards reconstructing human nature and the role or function of human beings in relation to nature (which I will discuss in chapter six).

Conclusion

In this chapter, I critiqued the conventional materialist, dualistic idea of nature that divorces nature and culture. I first discussed the extreme semantic complexity of the terms *natural* and *nature*. I discussed that *nature* has many meanings and that our ideas are abstractions of nature, not nature itself. I made a similar argument regarding water in chapter one. *Nature* is a collective noun, and it has several senses. *Nature* also has meanings that are historic and political.

Further, I examined three dominant concepts of nature, which demonstrate the major problems with our post-modern idea of nature, and factors that lead to muddled environmental ethics. Despite trying to overcome dualism and anthropocentrism, these reconstructions still struggle from an imprecise use of nature, especially between using nature as a singular absolute noun, defining nature as "that which is not culture", which often descends into idealizing nature and demonize humanity, and nature bifurcated into abiotic and biotic objects. I examined how nature has been reconstructed by ecotheology's stewardship and creation approaches. Then, I examined the constructions of Moltmann, McFague, and Cobb in reconstructing nature. Lastly, I offered alternative constructions of nature, where nature is complex, connected, and emergent,

[138] For example, in Psalm 139:7, David asks "Where can I go from your spirit? Or where can I flee from your presence?" and then answers by saying "If I ascend to heaven, you are there; if I make my bed in Sheol, you are there. If I take the wings of the morning and settle at the farthest limits of the sea, even there your hand shall lead me, and your right hand shall hold me fast."

and which are based in a pluralistic, non-dualistic, non-anthropocentric constructions of nature. The alternative concepts are: nature as gaudium, nature without boundaries, and nature as both neighbor and neighborhood. My ecotheological reconstructions of nature rethinks nature as existing for its own sake, with its own relationship with God. Further, nature is valued by God and God commands humanity to respect and tend it. In addition, my reconstructions of nature rethink nature as a unified whole, the dwelling place of all living beings and God who is Immanuel. Further, my ecotheological reconstructions reconfigure the relationship between the human and nonhuman parts of nature by reconstructing human beings as internal rather than external to the ecosphere. Such reconstructions are a necessary precursor to reconstructing water. In the next chapter, I will take up social constructions of human nature and how they might be reconstructed so that they cultivate and reinforce more sustainable and just engagements with nature.

Chapter Six: Reconstructing Human Nature

We must start by recognizing that metanoia, or change of consciousness, begins with us.
—Rosemary Radford Ruether, *Gaia & God*[1]

Introduction

In *East of Eden*, John Steinbeck introduces his readers to the landscape of the Salinas Valley at the turn of the twentieth century, and to the relationship its farmers had with water.[2] Steinbeck describes the ebb and flow of wet and dry years, which range between twenty-five inches of rain per year to as little as seven. In wet years, Steinbeck tells us, the land would be joyous and fecund, whereas in dry years, the land would dry out and its farmers would suffer. Steinbeck claims that the suffering of the Salinas farmers was of their own making and was inexorable: "And it never failed that during the dry years the people forgot about the rich years, and during the wet years they lost all memory of the dry years. It was always that way."[3] Steinbeck's blunt proposition has frequently been quoted by journalists, water professionals, water researchers, and, in at least one instance, the judiciary.[4] Perhaps because much of *East of Eden* is an exploration of free will and hubris, the water literature has taken Steinbeck's proposition as axiomatic of human nature. The water industry, it would seem, presumes human nature to be

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[1] Rosemary Radford Ruether, *Gaia and God: An Ecofeminist Theology of Earth Healing* (San Francisco: Harper San Francisco, 1992), 269.

[2] The Salinas Valley, which is the setting of many of Steinbeck's novels and short stories, is located south of San Francisco, and is one of the most productive agriculture regions in California.

[3] John Steinbeck, *East of Eden* (New York: Viking, 1952), 5–6.

[4] Examples include Peter Gleick, *New York Times*, 2002. Recently in the SF Chronicle, "A permanent solution to California's water woes — Seawater," publications of the EPA, such as https://archive.epa.gov/region1/ra/column/web/html/drought_200204.html. Recent news media examples are Michael L. Waxer, September 12, 2018; Steinbeck's prognosticatory words have even found their way into legal opinions, such as 9th Circuit Court of Appeals Judge Richard C. Tallman, who opened his decision with an extended quote that includes this passage, San Luis & Delta-Mendota Water Auth. v. Locke (9th Circuit, United States Court of Appeals December 22, 2014). I have also found the quote in the reports and webpages of many non-profit water protection and conservation institutions, such as Riverkeeper and the Water Education Foundation.

innately selfish and imprudent.[5] Water advocates and academics appear to agree, to which they would add anti-ecological

The construction of human nature as "always that way" seems natural to the point of being self-evident. Indeed, we often do not notice that we think of human beings this way. However, this construct is not transhistorical or universal but is a product of several centuries of intellectual and social processes, and is a part of a larger Euro-western social construction that understands human nature in primarily material and transactional terms (such as with the social, political, and economic realms). Moreover, Euro-western constructs represent human nature in terms of exceptionalism, rationality, autonomy, and egoism rather than relationally or affectively. We have complex, layered social constructions of human nature that enables and constrains our everyday practices. As I have stated in prior chapters, these constructs are so fundamental to how we think that it is accurate to say that we think with them.[6] Just as Richard Adams wrote, which I also remarked on in the introduction and five chapter, "When we think of the downs, we think of the downs in daylight, as with think of a rabbit with its fur on. Stubbs may have envisaged the skeleton inside the horse, but most of us do not: and we do not usually envisage the downs without daylight, even though the light is not a part of the down itself as the hide is part of the horse itself." When we think with human nature, in many cases we take for granted that humans are self-determining and self-seeking individuals capable of making rational

[5] John Steinbeck, it would seem, had a more nuanced interpretation of human nature. The subsequent chapters of *East of Eden* chronicle the human struggle with selfish inclinations and free will, and ultimately portray human nature as paradoxical rather than inescapably self-seeking and corrupt.

[6] Heather Eaton, "Where Do We Go from Here? Methodology, Next Steps, Social Change," in *Christian Faith and the Earth: Current Paths and Emerging Horizons in Ecotheology,* eds. Ernst M. Conradie, Sigurd Bergmann, Celia Deane-Drummond, and Denis Edwards (London: Bloomsbury Publishing, 2015), 202.

and moral decisions, and that construct of human nature is what governs our everyday practices.[7] Adams words demonstrate how complex our conceptualization can be. Human beings unconsciously deploy well-known information to comprehend and make meaning of our experiences, and can even conceptualize the act of conceptualizing. Not only can we conceptualize concrete experiences, we can conceptualize highly complex and abstract constructs such as human nature and theories of human nature. This has happened with theorizing human nature; a particular construct that had previously been created to understand what human nature is and relating it to other constructs, such as purpose or nature, becomes an unconscious assumption that frame how we understand human nature, and in turn we think of that particular construct as given rather than constructed, universal rather than particular.

Why is this important to ecotheology or religious environmentalism? As I wrote in chapter five, for many years it has been recognized that how human beings conceptualize the world in which they live and interact—both implicit and explicit constructs—enables and constrains their everyday actions. Not only are objects and events, such as money and holidays, socially constructed but so too are our ideas of the assemblage of characteristics and propensities that are commonly termed *human nature*. In "The Historical Roots of Our Ecological Crisis," Lynn White, Jr. claims that the unconscious idea of humans as separate and superior to nature, as well as nature's appropriate master, has its origins in Christian doctrine. White also explains that such an idea of human nature has regulative effect on everyday practices.[8] White sought to make visible the ways in which later twentieth century constructions had been shaped by previous

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[7] Richard Adams, *Watership Down* (New York: Macmillan, 1974), 164. George Stubbs was an eighteenth-century British painter known for his 1766 work, *The Anatomy of the Horse*, which is an illustrated study of equine anatomical systems, including their skeletal system. *Anatomy of the Horse* is still available in print.
[8] Lynn White, Jr., "The Historical Roots of Our Ecological Crisis," *Science* 155, no. 3767 (March 10, 1967): 1203–1207, 1206.

medieval Christian ones. Similarly, much of the literature of ecotheology has attempted to revise or reconstruct the anthropocentric elements of Christian ideas of human nature. While there exists much work on the constructs of human nature in ecotheology, to date the literature has typically examined the anthropocentrism attributed to Christian doctrines (albeit earlier ones) as the chief culprit. This work has been very important. However, far less has been written about the influence on Euro-western constructions of individualism, which similarly has its origins in Christian doctrines and the intellectual traditions of the Early Modern and Modern eras. I contend that individualism is as influential to current anthropocentric constructions of human nature as medieval ones, and that making all the "roots of the ecological crisis" visible is an important task for ecotheology and religious environmentalism. Furthermore, one of ecotheology's distinct contributions to water research and discourses could be to lay bare this shortcoming in the water literature by showing that few have stepped outside the modern and postmodern ideas of human nature, or explored the roots of either theological or philosophical anthropologies to better understand how Euro-western industrial societies construct both human nature and the relationship of water and humanity. Thus, the overarching subject of this chapter is the social constructions of human nature, that is what characteristics and propensities are theorized as basic to human nature and how has human nature been differently theorized in different ages. Specifically, this chapter will examine what the current dominant constructions in the West, and how they have roots in the pre-Christian, Christian, and later secular intellectual epistemologies. Additionally, as the dominant constructions are made and remade through culture, what reconstructions are possible.

Since the usage of the term *human nature* varies among disciplines, some clarification is due here. There is an ambiguity in theorizing the nature of what is characteristic of human beings

that arises from a narrow definition of *human nature*. Some disciplines exclude all considerations of the artificial (non-biological) within *human nature*. Theologian Mikael Stenmark discusses this in his work, explaining that ambiguity arises because authors restrict their meaning so as to denote only traits or behaviors that are biologically inborn in human beings. However, Stenmark states that this is one way, but not the only way, *human nature* may be understood. *Human nature* may also denote all qualities and actions—whether biological or social—that characterize humans.[9] I appreciate Stenmark's differentiation, and will follow Stenmark's example and take *human nature* as inclusive of biological and cultural characteristics of human beings. As I have previously indicated, a narrow understanding of essential characteristics of humankind as only social or biological characteristics and propensities would be inconsistent with understanding nature as being on a spectrum, that is as an unbifurcated whole. As such, I will use the term *human nature* inclusively, including all things that human beings do that are learned or shaped by culture as well as characteristics and propensities that are a product of natural selection. In addition, I will distinguish between approaches that define human nature in terms of biological factors versus approaches that define human nature in terms of cultural-social factors.

What then does it mean to theorize about human nature? At its most basic, theories are speculations about the characteristics human being share, which may provide predictive information about human thoughts, feelings, and actions.[10] Theories of human nature do not need to be explicit or consciously held for them to have regnant power, by which I mean that many

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[9] Mikael Stenmark, "Three Theories of Human Nature," *Zygon* 44, no. 4 (2009) 897–98.

[10] The literature on human nature is extensive, and highly contested. In the twentieth century, many post-modernist in philosophy and other social sciences have argued that it is impossible to find an essential human nature, or that it is meaningless to theorize one, because humans are so varied and situated. However, I contend that, apart from whether theorists can agree that there is an essential human nature, Euro-western culture does have an abiding social construction of what humans are and what we reliably do. And it is this idea of human nature that we think with.

people hold tacit theories about human nature that are broadly shared with others within their culture. There are many disciplines that argue that there is no such thing as a theory of human nature.[11] While I recognize that there are coherent arguments against theories of human nature, I contend that many of these arguments are premised on a dualism between nature and culture mentioned above. Thus, I contend that it is possible to theorize about human nature in a meaningful way. There are biological and social characteristics that are distinct to human existence and nature, and they can tell us something worthwhile about what we are, what we do, how we relate to each other and other animals, how we relate to the larger communities and environs in which we live.

In chapter five, I reviewed critiques of conventional constructs of nature by ecotheologians and present alternative constructs. The dominant ways of understanding human nature are similarly problematic. Therefore, in this chapter, I will review the dominant social constructions of human nature to evaluate how they shape and reinforce everyday practices that damage the environment, and what their origins are, both religious and secular. As with chapter five, I will use White's "Historical Roots" as a rhetorical frame, addressing both the anthropocentrism brought to the current moment by Christianity, and I will also address the individualism that White did not identify or challenge. Thus**,** I will address how the dominant social constructions of human nature has roots in Christian doctrine but I will also take into account the epistemologies/social forces that have also contributed to the understanding of humanity as independent of, superior to, and master of nature. The third section follows with an examination of this dominant construct and its roots, and suggest that an analysis and criticism of

[11] Ernst M. Conradie, *An Ecological Christian Anthropology: At Home on Earth?* (Aldershot, UK: Ashgate, 2005), 4; Anna L. Peterson, *Being Human: Ethics, Environment, and Our Place in the World* (Berkeley, CA: University of California Press, 200), 3–9.

classical liberal individualism is as important as anthropocentrism in reconstructing an understanding of human nature that is compatible with ecotheology. In the fourth section, I examine alternative constructions of human nature offered by several ecotheologians, which gives a sense of the variety of responses from the field. In the final section, I suggest alternative constructions that are more appropriate constructs for ecotheological Christian communities, and make note of how they have addressed or not addressed individualism.

Lynn White, Jr. and Reconstructing Doctrine of Creation

In chapter five, I discussed Lynn White, Jr.'s thesis that the ecologically destructive practices of western-industrialized countries emerged as a result of medieval Christian dogmas, notably the doctrine of creation, and therefore Christianity is uniquely responsible for the current ecological crisis.[12] I argued that White's "Historical Roots" had effectively been a prophetic cry to late twentieth century Christians and environmental activists because it has functioned to judge the role Christianity had played in the ecological crisis as well as sparking hope for an alternative future. White's challenge was twofold. First, as Christianity is the medium from which anthropocentric constructs of human nature originate, Christianity is uniquely responsible to revise or reconstruct them.[13] Second, White asserts that the fields of science and technology must become aware of the Christian roots and, he argues tacitly, hold Christianity to account.[14] The

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[12] White, "Historical Roots," 1203–1207. As I noted in chapter five, White used the terms "attitude," "view," "Christian view," and "Medieval view" somewhat interchangeably, and I take his meaning as closest to worldview (i.e., *weltanschauung)* rather than social construction. I understand worldview as a comprehensive theory of the world and humanity's place within it that are historically conditioned. In contrast, social construction denotes a meaning for a phenomenon, entity, or object that has been jointly constructed through social interactions and that meaning has been widely accepted to the point that it is taken-for-granted. Thus, what distinguishes the two is the scope, with worldview denoting a more comprehensive theoretical entity and social construction denoting a narrow theoretical entity. Social constructions, which are also called constructs, function to cognitively deal with an object, event, or idea. Constructs can be either a deliberate heuristic tool or may arise organically and unconsciously.

[13] White, "Historical Roots," 1207.

[14] White's challenge was directed primarily to scientists and engineers. Originally delivered as a speech to the American Association for the Advancement of Science in 1966, "Historic Roots" was then published in the journal *Science*, rather than a theological or historical journal.

second facet of White's challenge has had less notice but it is equally important to hear for ecotheology and religious environmental movement organizations (REMOs), and this is doubly true of those seeking to address water crises. As I previously stated, the field of ecotheology has responded extensively to White's essay, and its primary thesis of exclusive Christian responsibility has been largely rejected.[15] Nevertheless, White's thesis may serve as a rhetorical device with which to discuss the anthropocentrism imbedded in conventional constructs of human nature. Further, while White correctly understood the significance of social constructions of human nature, he failed to consider other regnant constructions that arose and subsequently eclipsed their Christian roots, which I will examine below.[16]

White argues that what at first appears to be scientific or technological problems are in fact fundamentally problems stemming from inescapably crooked or distorted thinking. Effectively, White is stating that anyone concerned with ecological destruction must first interrogate how they think with nature and human nature. This is because our fundamental assumptions about nature and human beings constrain how we can conceive of the relationship between nature and humans. If we think of humans as essentially distinct from, superior to, and masters of nature, we cannot transform our everyday practices. Therefore, White argued that Christian reconstructions of nature and human nature are necessary first steps in any effort to

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[15] Elspeth Whitney wrote an excellent critique of White's two articles in "Lynn White, Ecotheology, and History," *Environmental Ethics* 15, no. 2 (1993): 151–169. A more comprehensive and constructive analysis can be found in Todd LeVasseur and Anna Peterson, eds. *Religion and Ecological Crisis: The "Lynn White Thesis" at Fifty, (London:* Routledge, 2016), most notably Mark Stoll's chapter.

[16] This point has been made by many scholars. For example, Larry Rasmussen, "Returning to our Senses: a Theology of the Cross as a Theology for Eco-Justice," in Dieter Hessel*, After Nature's Revolt: Eco-Justice and Theology* (Minneapolis: Fortress Press, 1992), 51–53; in Lauren Kearns, "Context of Eco-theology," *Blackwell Companion to Modern Theology* (New York: Blackwell, 2004), 466–67; and Michael S. Northcott, *A Political Theology of Climate Change* (Grand Rapids, MI: Wm. B. Eerdmans Publishing, 2013) 106.

respond to the crisis.[17] As he was most concerned with what knowledge and actions might reverse the eco-crisis, this is why White's most essential question is what are the foundational assumptions are that govern non-environmental practices.

In chapters three and four, I discussed social change and whether changing what is often identified as "values" can instigate social transformation in ecological practices, or if something more fundamental is necessary. Social practice theory posits that practices depend on knowledge, meaning, and materials, and therefore changing non-ecological practices involves more than scientific knowledge or technological innovation. Toolkit theory posits that everyday practices (which are also called lines of action) are selected from a repertoire of preexisting strategies, and have culturally created and recreated meanings encoded into them through social interactions. Both theories postulate that everyday practices are transformed through shifts in access to materials, competencies and know-how, but more keenly through shifting the meanings that are regnant but unacknowledged. Here, I do not mean to suggest that White was a proponent of practice or toolkit theory but rather wish to highlight that White's thesis is compatible with them. White's challenge to the scientific and technological communities was to become aware of how foundational assumptions about nature and human nature held sway throughout Euro-western culture, even for those who are not Christian, and even in fields considered to be founded on secular knowledge. This is a key point that White made, which is still germane today: we will not change our engagements with the natural world until we understand how we think with human nature in predictable, culturally constructed ways.

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[17] White, "Historic Roots," 1207 and "Continuing the Conversation" *Western Man and Environmental Ethics*, ed. Ian Barbour (Menlo Park, CA, Addison-Wesley, 1973), 62.

White's thesis was that the root causes of the ecological crisis are the deeply held, taken-for-granted constructions through which we grasp and organize our understanding of nature and humanity that emerged from Christian doctrine during the middle ages, which have since enable and constrain nature-human interactions. Specifically, White argued that in Euro-western culture, due to Christian doctrine holding that humanity was created in God's image and likeness, as well as the mandate to subdue and have dominion over non-human animals, a different construction of human nature emerged, that of the separate and superior character of human beings. Latin Christianity taught that:

> Man named all the animals, thus establishing his dominance over them. God planned all of this explicitly for man's benefit and rule: no item in the physical creation had any purpose save to serve man's purposes. although man's body is made of clay, he is not simply part of nature: he is made in God's image.[18]

Thus, White claims that Christianity recast human nature as ontological distinct and superior to all other abiotic and biotic entities, and God created the world for the benefit of humanity and for human beings to rule over.[19] Furthermore, White argues that the doctrines of Christianity made and continue to remake an inescapably anthropocentric construction of humanity and humanity's dominion over the world. Much of ecotheology has followed White's thinking by focusing on the anthropocentric dualism and exceptionalism found in biblical texts, creeds, and thought, and has responded with a wealth of retrievals, revisions, and reconstructions.

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[18] White, "Historical Roots," 1205.

[19] What is worth noting is that White does not address any other part of the biblical texts or how they were interpreted by the Christian tradition (particularly after the schism between East and West), either how humanity and nature understood as separate (dualistic) yet valued (non-exceptionalism). While there are exceptions, a consensus of ecotheologians have revisited the doctrine of creation found in Genesis, in terms of human ontology/being and a) offered rigorous textual criticism as well as b) reflected on it in light of the rest of the biblical texts. Secondly, ecotheology has revisited doctrine of creation in terms of anthropocentrism—unique relation to God and superior value—with mixed results. Some ecotheologians have retained a separate, special role for humans (steward) whereas others have reconstructed an idea of humans as gardener or person-in-community.

However, while White's thesis was pioneering, it was nevertheless incomplete. White hypothesized that our incognizant social constructions are entrenched in Christian anthropocentrism and did not address other political, economic, social, and epistemological factors that emerged in the eighteenth, nineteenth, and twentieth centuries. As with constructs of nature that I examined in chapter five, White likewise did not account for factors that were pivotal for how human nature was reconstructed in the modern era through forces such as the rationalism and empiricism of the Enlightenment or the sweeping political and economic shifts that occurred in the eighteenth century and nineteenth centuries. Two intellectual moments are enormously significant to the development of modern ecologically destructive practices: individualism and liberalism.[20] The most basic assumption of individualism is human beings are separated, self-sufficient subject/agents. Individuals are, above all, independent and free. During the Renaissance and Reformation, intellectuals increasingly came to understand human existence in terms of individuals rather than as groups, such as families, tribes, or nations. Emerging from early modern European philosophy, classical liberalism is a political philosophy that regards freedom to be essential to human flourishing, most especially individuals, and therefore values freedom as a paramount value. Liberalism has a skeptical, even hostile, view of constraints placed on individual freedom by governments or religious bodies. The influence of individualism and liberalism to the current ecological practices cannot be understated for together they set the stage for economic and political structures that directly affect ecological practices. I will examine individualism and liberalism in greater detail in the next section. The significance in terms of White's challenge is that, in not addressing individualism or liberalism, White overlooking

[20] Here, I am using the terms *individuals* and *liberalism* broadly. Each word has a wide usage in political theory, philosophy, and sociology.

enormously important influences to the Euro-western understanding of human nature that continue to govern how we think to this day.

While he makes clear that the medieval "idea of man" must be reconstructed, White does not provide an explicit account of the modern "view of man." Rather, the reader is given glimpses from which it is possible to deduce a social science approach through White's opening remarks and his rebuke of Christian anthropology. White states, "Formerly man had been part of nature; now he was the exploiter of nature." White is particularly critical of what he interpreted as modern Euro-western anthropocentric constructions of humanity. He writes, "Despite Copernicus, all the cosmos rotates around our little globe. Despite Darwin, we are not, in our hearts, part of the natural process. We are superior to nature, contemptuous of it, willing to use it for our slightest whim."[21] However, White fell short of his own challenge by not accounting for factors such as the philosophy of individualism that emerged in the Early Modern period, or the profound political and economic shifts that occurred in the eighteenth century and nineteenth centuries, which as I explained in previous chapters, restructured Euro-western culture and thus reconstructed human nature. Individualism was enormously significant to the development of modern political and economic arrangements that made possible ecologically destructive practices. Individualism is a philosophical stance that emphasizes the separateness and autonomy of each person, and the equality of each person. In overlooking the individualism that is integral to the Euro-western understanding of human nature, White overlooked an indispensable "root" of the West's ecologically destructive practices.

White also did not account for the tension between approaches to theorizing human nature—that the social sciences approach that he assumed was inconsistent, even in opposition

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[21] White, "Historical Roots," 1206.

to, the approaches of traditional Christian doctrine and natural sciences after Darwin. I will discuss this more fully in the next section but want to call attention to a premise that White's prophetic call rests on, which is that human nature is not given but is socially constructed and may be reconfigured through cultural processes. This is significant because so many others in ecotheology have followed White's example and worked to reconstruct modern and postmodern ideas of nature, human nature, and the nature-human relationship. While the theory that human nature is a product of culture and can be reconfigured by culture is widely held within the social sciences, it is crucial to understand that there are other approaches to human nature that theorize human nature as given and fixed. Hence, for ecotheology to be a dialogue partner with the physical sciences, as White and many others have called for, the gap between approaches must be acknowledged. Let us now turn to an exploration of the constructs of human nature that we think with, that is to say what are the contemporary constructions of human nature. It is important to make visible that we think of human nature in predictable, circumscribed, socially constructed ways.

Theorizing Human Nature in the West

This section will explore dominant social constructs of human nature that have shaped how Euro-western culture engages with the natural world.

FOUR KEY APPROACHES

As I have stated previously in terms of constructions of nature, it is likewise true that there is no single way to understand the character and purpose of humankind. Philosophy has a long history of theorizing human nature, and more recently the social and natural sciences have developed a wide array of theories. Likewise, the many religions of the world have their own teachings, and even within particular traditions such as Christianity, a wide variety of understandings of humanness have emerged. My purpose is to examine the constructs that we think with, and

therefore it is beyond the scope of this chapter to survey of all approaches of human nature. Rather, taking a cue from theologian Mikael Stenmark, I will examine key approaches, each of which contribute to the current anti-environmental social construction of human nature in the West.[22] However, I have added an approach to Stenmark's three that I believe is a necessary precursor to the bio-evolutionary and social science approaches. The four approaches are: Christian, Early Modern, bio-evolutionary science, and social science. I present the four approaches in a rough historic order, though the latter two approaches are largely concurrent.[23] The bio-evolutionary and the social science approaches have some of their roots in Christian thought, but I will argue that perhaps it is not the dualism of Christian theological anthropology that alone are the genesis of dysfunctional ways of understanding human nature. The significance of the approaches is not whether any are correct or even how influential but to show that how we understand and represent humanness is contested and varied. In addition, understanding the foundations of our most dominant ideas of humanness may help to reconfigure our constructions, and therefore I will examine what the key approaches have in common and how they diverge. Most notably, I seek to bring attention the tensions between theorizing human nature as given versus social constructed, and to make conspicuous the individualism that is foundational to the current dominant social constructions of human nature. I argue that it is important to confront the individualism that is a core element of the Christian, Early Modern, scientific, and social

[22] In "Three Theories of Human Nature," Stenmark identifies three "competing views" of human nature that are currently the major approaches of Euro-western culture to theorizing human nature. Stenmark labels them: the Christian view; the evolutionary psychology view, and the social science view. Stenmark uses these three theories to explore the compatibility and tensions between them. See Mikael Stenmark, "Three Theories of Human Nature," *Zygon* 44, no. 4 (2009): 894–920.

[23] My reasoning here is that the bio-evolutionary approach roughly began with *On the Origin of the Species* (1859), whereas the social science approach gained standing and influence beginning with the work of Karl Marx, Emile Durkheim, and Max Weber, which gained recognition in the 1860s, 1880s, and 1890s respectively.

scientific method of understanding human nature. Below, I will give a brief summary of the four approaches.

The Christian approach understands human beings as created in God's image and likeness, having the role of ruler of the natural world. As such, human beings are unique among God's creation, and superior to it. Unlike counterpart religions in the ancient world, Christianity had a greater focus on the individual. This interpretation is not original to the biblical corpus but instead stems from the writing of Paul and patristic fathers such as Augustine of Hippo who interpreted the teaching of Jesus to mean that each human is equal in God's love and are intrinsically valued as individuals.[24] The Christian approach holds that human beings have free will but are incapable of redeeming themselves, and they inevitably sin. While some Christian denominations argue for total depravity of human nature whereas others argue for partial depravity, all agree that human beings have an innately corrupt nature. Hence, human nature is fixed and given as it is a product of God's creative action, and not a product (at least not originally) of biological, evolutionary processes or of contingent cultural, historical circumstances. In the Christian approach, human action is believed to be motivated by the desire to obey to God as well as selfish desires for power, status, or pleasure. The approach is normative rather than descriptive.

As with any age, the thinkers of the Early Modern period were grappling with challenges new to their time—the devolution of centralized religious authority and ascendency of absolute

[24] Mark R. Stoll, *Protestantism, Capitalism, and Nature in America*, 1st ed. (Albuquerque: University of New Mexico Press, 1997), 23–24; Theodore Hiebert, "Reclaiming the World: Biblical Resources for the Ecological Crisis," *Interpretation* 65, no. 4 (October 2011): 342. doi.org/10.1177/002096431106500402; Barbara Rossing, "The World Is About to Turn: Preaching Apocalyptic Texts for a Planet in Peril" in *Eco-Reformation: Grace and Hope for a Planet in Peril*, eds. Lisa E. Dahill and James B. Martin-Schramm (Eugene, OR: Cascade Books, 2016), 152.

monarchies coupled with vast economic reorganization and innovations. This is reflected in how they refashioned understandings of human nature. In the Early Modern approach, which was grounded in Christian doctrine but not uncritical of it, a greater emphasis was placed on the separate and superior character of humans. Humans uniquely possessed an immaterial soul and a mind capable of reason. In the view of Early Modern thinkers, human beings, by virtue of being born with the ability to reason, had a purpose different than nonhuman animals. While some thinkers held a more optimistic view of human nature, such John Locke and Jean-Jacques Rousseau, the prevailing sentiment of the age was that humans were fundamentally competitive and inclined towards self-interest, which necessitated up social structures such as political, economic, and legal institutions that are grounded in protecting individual human not community (not family, village, nation or humankind). However, human reason had the power to mitigate the baser inclinations. An important shift in thinking emerged from the work of John Locke, who argued that human beings are born with a mind that is a tabula rasa and therefore all knowledge is gained through sensory experience. Locke's tabula rasa paved the way for later social science approaches, such as Marx and Weber. In several significant ways, Early Modern thinking broke from traditional Christian approaches to human nature. The social construction of human nature that emerged in Early Modern period, in seeking knowledge and certainty, emphasized the individual as the seat of knowledge, and reason.[25] Hence, human's role shifted from ruler of nature by virtue of image of God to being rulers of nature by virtue of superior intelligence and ingenuity. Culture came to be understood more as a collection of individuals than an organic whole. In addition, perhaps due to the political uncertainty and dramatic reconstructions of

[25] John B. Cobb, Jr., "The Role of Theology of Nature in the Church," in *Liberating Life: Contemporary Approaches to Ecological Theology*, eds. Charles Birch, William Eakin, and Jay B. McDaniel (Maryknoll, NY: Orbis Books, 1990), 269–270.

Christian theology, a greater emphasis was placed on human autonomy and freedom as the highest value. Humans are understood to have a high degree of free will, and to be motivated toward action by self-awareness as well as a natural inclination towards self-determination, freedom from constraint, and desires for security, pleasure, and power. As with the Christian approach, the Early Modern approach is normative rather than descriptive.

The bio-evolutionary approach emerged in the second half of the nineteenth century from the work of natural philosophers and naturalists. While influenced by Christian thought, how the bio-evolutionary approach has come to construct human nature has been principally shaped by secular thought for several centuries. In contrast to the Christian approach, the bio-evolutionary approach conceives of human nature in terms of matter, with the human mind (or sometimes consciousness) arising from the electrical-chemical activity of the material brain. The bio-evolutionary approach argues against an immaterial or supernatural soul, and against a human telos. In addition, the bio-evolutionary approach understands human nature in contrast to other animals, which has a tendency to over emphasis human uniqueness or to limit what can be said with certainty about human nature to characteristics or traits that human beings can claim exclusively. Thus, constructions of human nature tend to explain humans in materialist-evolutionary terms, such as physical abilities, aggression, or self-interest, but not address normative claims. Further, the bio-evolutionary approach accounts for human predilections not through ideas of hubris or sin but rather that humans are motivated towards action/reaction by selfish, survival-oriented drives, that is seek pleasure and avoid pain. Yet, perhaps due to the influence of the Early Modern thinkers, the bio-evolutionary approach explains that human beings can inhibit or attenuate socio-biological drives through higher cognition, which some might call self-regulation originating in the cortex but in an earlier age would be called “the light

of reason." Unlike the previous approaches, the bio-evolutionary approach is descriptive rather than normative, and exponents resist concluding a purpose or function of humans aside from survival or, in some instance, reproduction of offspring.

Differing from both the Christian and the bio-evolutionary approaches, the social science approach, which emerged in the nineteenth and twentieth centuries and has strong roots in the intellectual tradition of the philosophy of the Early Modern period, understands human nature as being a product largely of social factors. Human traits and behaviors are solely constructed in the sense that they are cultural processes, and are acquired through learning and socializing rather than being genetically inherited or the result of biological factors. Therefore, human nature is a result of endlessly recursive culturally shaped social processes, and are highly mutable, and, while not exclusively limited to cultural processes, contend that human nature is a product of learning and socialization.[26] One variation of this is economics, which suggests that a defining trait of humanity is the drive to maximize opportunities, whereas political theories would argue that human beings are by nature adversarial. As with the bio-evolutionary, the social science approach is descriptive rather than normative. In addition, the social science exponents do not conclude an essential human purpose. Instead, they explain, any purpose ascribable to humans would be a socially constructed one.

When ecotheologians and water-focused REMOs grasp and appreciate the differences between these four approaches, a more sophisticated and nuanced reading of the larger discourse in human nature developed. In addition, a much richer reading of the research on water, nature, or human ecological (or anti-ecological) engagement with the world becomes possible. Not only

[26] Leslie Stevenson and David L. Haberman, *Ten Theories of Human Nature* (New York: Oxford University Press, 2004), cited in Mikael Stenmark, "Three Theories of Human Nature," *Zygon* 44, no. 4 (2009): 903.

do we comprehend that the approaches are discordant and contradictory but we realize that the approaches have different assumptions and questions as well as ontological and epistemological ramifications that in turn may shape how we organize and make sense of our everyday lives, as well as human-water engagements.

As I have said, the approaches are significant in what they tell us about how we understand and represent human nature. What the four key approaches of human nature agree on is that humans are distinct from other abiotic and biotic entities. The basis and degree of human distinctness varies among them but each understands human nature as ontologically different and superior to other entities. For the older approaches, humans are understood as having a greater degree of moral significance. They also agree that human nature is self-seeking. Moreover, it is significant that each of the approaches understands human nature in terms of individuality and autonomy. What becomes apparent from examining these key approaches is a recognizable construct that Euro-western culture thinks with. In the Euro-western mind, humans are unique, superior, and self-seeking, and thus human societies collections of rational, autonomous, self-seeking individuals rather than a community of interrelated and interdependent entities. However, it is important to restate that such an idea of human nature is not a brute fact but is a construct.

Further, a more in-depth understanding of the antecedents of the modern construction of human nature brings to light how Euro-western culture theorizes what drives human actions and how free human beings are to act. Christian constructions of human nature understand drivers of human action as mixed—human beings desire to love and obey God but are also continually tempted to sin, transgress, or participate in inequity. Human beings have the free will to choose the greater good, but human depravity means that it is less likely. In contrast, bio-evolutionary

approach understands the drivers of human action as largely material or physiological, such as hunger, fear, or jealousy. Thus, the ability of human beings to choose the greater good depends on the instrumental value of nature and well-being of humans. However, such an approach is problematic because it can rationalize and sanction consumptive and destructive practices as being natural, or even inevitable. In contrast to both the Christian and bio-evolutionary traditions, the social science approach understands human nature as driven by socially constructed meanings and expectations.

In addition, the divergences and the incompatibilities between the four approaches are equally useful in revealing what we think about theorizing human nature. In other words, contrasting the approaches clarifies the basic claims of each, fundamental assumptions embedded within them, and how those are sometimes congruent and sometimes incompatible. The approaches are divided, with the Christian and bio-evolutionary maintaining that human nature is given and fixed whereas the Early Modern and the social science approaches maintaining that human nature is socially constructed. Moreover, such positions are unarticulated and unquestioned, which leads to confusion and dissent. Many scholars and advocates working in ecotheology, and cognate fields like political ecology, anthropology, geography, environmental studies, and sociology, use a social science approach to human nature, and therefore view it as constructed and malleable. Is this incompatible with approaches such as the traditional Christian and bio-evolutionary sciences that view human nature as given and fixed? It would seem so. How is sin, such as for example the pollution of a water system by a negligent property owner, to be understood in terms of human nature that is a product of learning and socialization? Furthermore, unlike the Christian and Early modern approaches, both the bio-evolutionary and the social science approaches are descriptive, and therefore there are no basis for norms.

Likewise, whereas the Christian and Early modern approaches understand human nature to be purposeful, neither the bio-evolutionary nor the social science traditions see human nature as having a purpose except perhaps to reproduce oneself. Questions of moral value, freedom, and purpose may also be incompatible across the disciplines due to different approaches to theorizing human nature.

As can be seem from the above, there is a great deal more to our "view of man" than White indicated in his article, or has been attended to by other scholars in ecotheology. Much work has been done by ecotheologians on reconstructing human nature in regard to anthropocentrism. Additionally, fewer ecotheologians have addressed individualism, and its variants/descendants: liberalism and adversariality. In the post-modern West, we have a variety of approaches to theorizing human nature that have not-insignificant incompatibility. To complicate the situation even more, we sometimes adhere to the basic thesis of a particular approach within the context of discourses that aligns with that approach, yet in discourses in a different context may illogically argue against that thesis. We might even unconsciously agree with contradictory tenants, and therefore have internally incoherent constructs of human nature. As I stated in chapter five, human beings are able to hold simultaneous contradictory conceptualizations, and we do this with constructions of human nature.[27] The consequence of this is that, while we act as if we have one, we do not have a transhistorical or congruent idea of human nature. In other words, our current social construction of human nature is not a synthesis but rather an assortment of approaches, which each claim a variety of theories. Therefore, if the goal of ecotheology is to "rethink and refeel our nature and destiny," we must become aware of

[27] Jonathan Gottshall discusses this in his book *The Storytelling Animal: How Stories Make Us Human* (New York: Houghton Mifflin Harcourt, 2012), 103, 138.f

the taken-for-granted ideas of human nature that constrain and support how we think of the character and purpose of humans, how humans relate to nature, and relate to each other.[28] Further, we must scrutinize current dominant constructions of human nature to make visible how they are not simply anthropocentric but also individualistic.

THE RATIONAL, AUTONOMOUS, SELF-INTERESTED INDIVIDUAL

As I stated above, we have socially constructed human nature as a rational, autonomous, self-interested individual. This social construction is so foundational that it is an automatic cognitive process—we are not conscious of how we assume a particular, culturally constructed understanding of human nature and then think *with* it. As Adams wrote, we "think of a rabbit with its fur on" and "take daylight for granted."[29] Adams bringing to his reader's attention that, despite knowing that underlying systems such as a skeleton or solar radiation exist, our conceptualizations readily omit or include elements. We do this with animals and landscapes, and we do this with our idea of ourselves. Hence, we take it for granted that human nature is independent, rational, and self-interested despite scholarly evidence and personal experience contradicting such an idea. Prevailing conceptualizations of human nature emphasize exceptionalism, individuality, and human freedom, and do not address the human as related to other beings. There are few models for how humans are related to each other, nonhumans, and to their environs. In the search for what is essentially human, the individual human was isolated and stripped of relationality.

The bias toward an individualized construction of humanness is problematic because it allows, and perhaps even cultivates, attitudes and behaviors that lead to environmental abuse and

[28] White, "Historical Roots," 1207.
[29] Adams, *Watership Down*, 164.

exploitation.[30] It is very important to give attention to how our taken-for-grated ideas of human nature have been influenced by classical liberalism, notably in the political and economic realms, and how the Christian tradition in the past two centuries has not been critical enough of these ideas of human nature or their consequences. Indeed, even the field of ecotheology, despite a large body of its literature given to analysis and criticism of both nature and human nature, has presumed a modern Euro-western social construction of human nature. As seen above, White presumed a modern construction and traced the Christian antecedents, but he did not question that humanity and human behavior should be understood in terms of individuality, autonomy, and reason, or a social order structured with its basic unit being a free agent rather than a family, as would an ancient or medieval thinker.[31] Yet, this is a problem for an ecological theology that seeks to respond, to transform social practices. The reason this is a problem is twofold—if we have a circumscribed and implicit construct, are we really able to understand why it is we engage in anti-ecological practices, or what reconfigurations of either social structures could transform anti-ecological practices? Much of ecotheology is premised on the theory that our ecological practices are connected to our Worldviews. As I quoted previously in chapter five, White asserted, "What we do about ecology depends on our ideas of the man-nature relationship."[32]

Responses from Ecotheology

This section will explore ecotheological criticism of the construction of human being as rational, autonomous, self-seeking individual. I will give an overview of the criticism of anthropocentrism. I will then discuss the criticisms of individualism.

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[30] Peterson, *Being Human*, 205.
[31] Larry Siedentop, *Inventing the Individual: The Origins of Western Liberalism* (Cambridge: Harvard University Press, 2014).
[32] White, "Historical Roots," 1206.

Both in ecotheology and in cognate fields, scholars have long contended that dominant Euro-western constructs of human nature are anthropocentric, and a majority of ecotheologians have called for reinterpretations, if not reconstructions, of them.[33] Many ecotheologians have argued that anthropocentric constructions of human nature lead to consumptive and destructive political, economic, and social structures.[34] However, fewer scholars have examined how the intellectual traditions of individualism and liberalism have also influenced the foundational assumptions about human nature. Scholars who offered analysis/reconstruction of the individualism of the modern constructions of human nature include John Cobb, Ernst Conradie, Celia Deane-Drummond, Catherine Keller, and Anna Peterson. Peterson has done one of the most thoroughgoing analyses of the social construction of human nature, and what is more, she has offered several well-considered foundations for reconstructing human nature.

CRITIQUE OF ANTHROPOCENTRIC CONSTRUCTIONS OF HUMAN NATURE

In the past five decades, ecotheologians have produced a considerable analysis of the dualism and exceptionalism that arises from Christian doctrines, and have offered many reconstructions, which have contributed to the larger environmental work. Much of the analysis begins with a focus on the doctrine of creation and the creation narratives found in the book of Genesis. It must be noted that a wide variety of biblical and theological scholars have established that the dualism and exceptionalism that emerged from interpretations of the texts is inconsistent with the texts themselves. Theologians such as Rosemary Radford Ruether have accounted for the influence of

[33] Here, I am including a full range of scholars, from those who have closely examined the Christian doctrine of creation as well as scholars who have examined the much broader subject of Christian worldviews. Many of these scholars do not use the language of social construction but are essentially engaging in the same work, which is examining how human nature has been conceptualized and how it might be re-interpreted or reconstructed.
[34] For example, Melissa Brotton in *Ecotheology in the Humanities: An Interdisciplinary Approach — An Examination of Christian Culpability* (Lanham, MD: Rowman and Littlefield, 2016).

Hellenistic and Greek thought, by way of patristic authors, that constructed human nature in staunchly dual terms.[35]

The dualism between humans and nature arises due the immateriality of the human soul in contrast to the material world. The Christian differentiation between of the soul and body began with Platonic thought, which distinguished matter from the eternal forms. In Christian thought, the human soul was identified with the eternal forms whereas the body with matter. Not only are the soul and the body constructed as ontologically distinct substances, the soul is deemed to be superior to the body. While the dualism of soul and body has been criticized and rejected by many, the distinction between humans and nonhuman animals persisted, and we continue to conceptualize human nature as ontologically distinct from all other entities. The bias towards dualism is problematic for it leads to a devaluation of the material entities in favor of the more valued mind. Further, the dualism of soul/body, which later was understood as mind/body or even consciousness/matter also encourages a discounting of the natural world. All matter is devalued when contrasted with non-material soul, and substances and entities associated with matter, such as the female body, are likewise discounted while substances and entities that are associated with the mind, such as the male intellect, are valorized.[36]

Closely related to dualism is exceptionalism, which understands human nature both unique and also superior. There are many ways that humans are identified as unique. Throughout the Christian tradition, human beings have been thought to be fundamentally different than

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[35] Stephen Scharper, *Redeeming the Time*, 137; Rosemary Radford Ruether, *New Woman, New Earth: Sexist Ideologies and Human Liberation* (New York: Seabury Press, 1975), 2–3; and Rosemary Radford Ruether, "Ecofeminism: the Challenge to Theology" in Rosemary Radford Ruether, *Integrating Ecofeminism, Globalization, and World Religions* (Lanham, MD: Rowman & Littlefield Publishers, 2005), 69, 75–6.
[36] Steven Bouma-Prediger, *For the Beauty of the Earth: A Christian Vision for Creation Care* (Grand Rapids, MI: Baker Academic, 2010), 60–66; Conradie, *Ecological Christian Anthropology*, 24–26; and Christiana Peppard, *Just Water* (Maryknoll, NY: Orbis Books, 2014), 12.

nonhuman animals due to a soul. While nonhuman animals are created by God and valued by God, humans were uniquely created in God's image (Gen 1:26). Additionally, humans are understood as having a unique calling, also found in Genesis 1:26, that tells humans "to subdue and dominate" the rest of creation. Characterizing humanness as being unique among animals, or even unique among mammals or primates, is problematic because it defines humanness in terms of separation between human nature and nonhuman animals. Human nature is understood to be "not of the world" even as we live in the world. This separation between humans and nonhuman animals, and between humans and nature, leads to an alienation of humans from nature, and encourages attitudes and behaviors that exploit and degrade nonhuman animals, landscapes, and waterscapes. Closely tied to the characterization of dualism of soul and world, and humans and nonhumans, are other hierarchical dualisms, such as man/woman; master/slave, and culture/nature. Feminist, liberation, and ecofeminist theological have established the linkages between the dualistic construct of human nature and structures of social and institutional power.[37] This ontological dualism inscribed in dominant constructs of human nature encourages us to think of humans as superior to other animals or to the larger realm of nature, and allows human communities to put their own welfare ahead of considerations for other species. Constructing human nature as unique and superior to all other species effectively separates human beings from the created order, and invest humans with potent rights to maximize resources.[38]

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[37] Celia Deane-Drummond, *Eco-theology* (London: Darton, Longman and Todd, 2008), 146–163, 222–225; Heather Eaton "This Sacred Earth: At the Nexus of Religion, Ecology and Politics," *European Journal of Science and Theology,* 3, no. 4 (December 2007): 25–26; and Mary Grey, "Ecofeminism and Christian Theology," *The Furrow* 51, no. 9 (2000): 482–485.
[38] Ruether, *New Woman, New Earth*, 85

However, while Christianity has been greatly influential to the social construction of human nature in anthropocentric terms, it has been established that other intellectual, political, economic, and social factors were also influential in making and remaking human nature as separate from, superior to, and master of nature. Several recent scholars, such as Celia Deane-Drummond, Ernst Conradie, and Willis Jenkins take up the subject of theological anthropology, and advocate for reconstructing human nature through ideas of *oikonomos* (household), doctrines of eschatology and soteriology, and drama. While promising, I believe that this is a limited method for reconstructing dominant constructs of human nature. Therefore, let us now turn to a more detailed examination of influence of the philosophy of individualism.

Many scholars, within religious studies and other disciplines, have argued that Christian theological anthropology has greatly influenced the dominant construction of human nature in anthropocentric terms. Yet, the philosophical anthropology that emerged in the Early Modern Period, and become known as individualism, also shaped contemporary constructs. I would agree with scholars such as John Cobb and Anna Peterson, that the influence of individualism has been under-appreciated.[39]

RECONSTRUCTIONS OF HUMAN NATURE FROM ECOTHEOLOGY

John B. Cobb, Jr.

In looking at the anthropocentrism and individualism that are each a part of Christian constructions of human nature, John Cobb has many significant contributions. After noting White's lament that the relationship between nature and human nature has been, and continues to be, socially constructed through the lens of the medieval, anthropocentric interpretation of

[39] John B. Cobb Jr., *Reclaiming the Church*, 1st ed. (Louisville, KY: Westminster J. Knox Press,), 12, 64; Anna L. Peterson, "In and Of the World? Christian Theological Anthropology and Environmental Ethics," *Journal of Agricultural and Environmental Ethics* 12, no. 3 (January 2000), doi.org/10.1023/A:1009503215606, 256–257. Peterson also discusses this in *Everyday Ethics and Social Change: The Education of Desire* (New York: Columbia University Press, 2009), 37, 125.

Genesis 1:26–28 and 2:19–20, Cobb maintains that White's thesis must be taken seriously by Christian theologians as well as by the larger community of Euro-western scholars and environmental thinkers. White has stated that effective responses to the ecological crisis depend on confronting the social construction of human nature apart and above nature.[40] Cobb zeroes in on a very important detail when he writes, "The important question today is whether anthropocentrism is in fact a major obstacle to redirecting the public practices that are destroying the human environment."[41] Thus, Cobb agrees with White that the conventional construction of human nature in the Christian tradition has been anthropocentric. However, Cobb criticisms White thesis of Christianity being entirely anthropocentric or for the traditional anthropocentric construction of human nature being the singular root of the ecological crisis ((he called them *root* but they might also be called systemic)). Cobb makes clear that there are many other views of human nature and purpose in the biblical texts. Cobb also contends that individualism shaped the contemporary circumscribed construct of human nature in equal measure to anthropocentrism. Cobb writes, "… the greatest problem for responding healthily to a wide range of issues, many of which are directly relevant to nature, is now the heritage of the Enlightenment. The Enlightenment fastened upon our minds anthropocentrism, dualism, and individualism."[42]

Over the course of five decades, Cobb has written often on reconstructions of human nature. Cobb's reconstruction is significant as he not only reconstructs human nature in terms of ecology but also from the perspective of process theology. Cobb rejects an exceptionalistic construction of human nature as human beings are a *society of actual entities* that are in process, as are nonhuman animals. Cobb allows that humans are distinctive—but are, just as any other

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[40] White, "Historical Roots," 1206.
[41] John B. Cobb, Jr. "Biblical Responsibility for Ecological Crisis," 14.
[42] John B. Cobb, Jr. "Role of Theology of Nature," 269.

animal, a species that has evolved and is still evolving. We are not special in our ability to feel or act but are in the Cobb says that human beings have a greater richness of experience that does distinguish humans from other animals. Additionally, the Judeo-Christian tradition gives us a special role. Cobb asserts that doctrine of dominion has long been misinterpreted, and that interpretation has been used to justify exploitation. Cobb reconstructs the role of humans as co-created species with special responsibilities. Cobb does argue for hierarchy among beings, that a richness of experience is more valuable than a less rich one. Therefore, there is more value in the life of a human than an amoeba. In terms of individualism and liberalism, Cobb rejects modern constructions of the continual improvement of humanity, which is often called *human progress*. Cobb further asserts that humans must nurture self-transcendence (such as the prophetic tradition), and lament and continually discern the systemic evil in the world, that is found in individuals and social structures.[43] The Process idea of relationality is that all entities, and human beings are societies or actual entities, come into being in relation to all other entities, rather than existing in and of themselves independently. Thus, all entities are characterized by intersubjectivity and interdependence. Human beings are mutually constituted by the material and social worlds, that is by the material processes and social processes, into which they are born.

Anna Peterson

Peterson offers an alternative foundation for understanding human nature. Peterson suggests five new qualities with which to conceive of humanness: shaped by nature and nurture, terrestrial, embodiedness, relationality, and limitations. Using these qualities, Peterson states, more accurately represents our full humanity and our relationship to the non-human world.

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[43] John B. Cobb and Herman Daly, *For the Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future* (Boston: Beacon Press, 1989).

SHAPED BY NATURE AND NURTURE—Scholars have argued for many years whether the development of an individual is driven by biological forces, often assumed to be congenital, or if socialization plays the larger role in shaping an individual. Likewise, do human groups, such as clubs, congregations, schools, or families, shape culture. Scholars in many fields have aligned themselves primarily with two schools of thought, one favoring the idea of nature as supreme and the other finding that nurture is more influential. Each school of thought has legions of loyal advocates with volumes of data to prove their point. Peterson reviews these and concludes that there is a third way of understanding what shapes individual development.[44] She argues that humans are shaped both by their biological natures and by their cultural environments. Peterson argues that to characterize humanness as shaped exclusively by nature or shaped exclusively by nurture misrepresents human development and culture. The truth is much more complex, for biology and culture are each powerful and intricate forces. Accepting the intricate play between these two forces opens an entirely new and rich way to conceive of humanness.

TERRESTRIAL CHARACTER—Humans have long been thought of in the West as temporary tenants on Earth. Greek thought and Christian tradition have each contributed to the mistaken view that the true home of human beings is non-terrestrial. Additionally, urbanization has contributed to alienation from landscapes and waterscapes. When we venture into non-urban spaces, we lose our sense of waters of rivers, lakes and oceans. Additionally, humans are highly adaptive and we habituate to our daily environments. When we live our lives insulated from the phenomenon of the material world, via heated homes and running water, we become detached and disconnected. Yet we remain supremely dependent on the landscapes and waterways within which we live. There is no life for humans elsewhere. We must re-conceive ourselves as terrestrial. It is not that

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[44] Peterson, *Being Human*, 186–196.

we forget to value a space so much as we are highly adaptable to our environments. Knowing this about ourselves can shift our consciousness.

EMBODIED—Euro-western social constructs of humanness have most often rejected our bodies as a significant part of our true selves. The body has been viewed as accidental or an unfortunate but necessary vehicle for the mind or soul. Similar to the bias against being "of the World", the dualism of mind and body, as noted above, has its origins in Greek and Christian traditions. Indeed, often Euro-western thinkers have assumed that the body is to be tolerated until it can be escaped from. Peterson argues that these conceptualizations are highly problematic and must be overturned.[45] The mind cannot exist without the body. Indeed, much cutting-edge neurological science has shown that there is no such division between mind and body. The mind exists through the physical forces of the body—they are inextricably intertwined. Also, the mind creates the body. Thought influences how the body works and grows. A human mind divorced from a body is impossible. Rather, we must think of mind and body as compliments to one another.

RELATIONALITY—Peterson argues that humanness has been understood as individual rather than social, and this understanding has been environmentally harmful.[46] Yet, a direct reversal is not appropriate, according to Peterson. Human lives are simultaneously individual and related. Further, Peterson advocates becoming aware of the myriad ways in which humanness is understood in other cultures, and also the diversity of perspectives within a single culture from the different standpoints of privilege. She rejects a subjectivism that might be tempting when faced with such tremendous diversity, opting for a limited objectivity. Hence, she argues that

[45] Peterson, *Being Human,* 201–203.
[46] Peterson, *Being Human,* 206.

understanding humanness as individual and relational is a more accurate conceptualization. In fact, Peterson contends that it is also ethically important.

LIMITATIONS—Peterson describes a different way of understanding humanness as limited. Human nature is constrained by the nature of its embodiedness, finiteness, and cultural shaping.[47] Among human communities, human beings are also limited by gender, location, class, and ethnic membership. Peterson emphasis other limitations, such as constraints on our ability to know ourselves and the world, our ability to shape our world, the intractability of human frailty, and the frailty of our planet's delicate ecosystems. Peterson notes that recognition of these limitations can be a helpful tonic for our destructive attitudes and behaviors. Further, Peterson writes that an understanding of humanness as limited does not invite resignation. As Buddhism teachers, Peterson explains, continued mindfulness in thought and practice are enormous steps towards, not perfection, but toward improvement. Buddhism recognizes that perfection is not possible, but gradual improvement is achievable and does do good.

Having discussed several responses to conventional and dominant (regnant) constructs of human nature, I will next discuss alternative social constructs that I have developed.

Further Alternative Social Constructs of Humanness

As I stated in chapter one, in this dissertation I rely on the methodology of social constructionism. I have presumed a soft social constructionism, by which I mean that human beings do not materially construct entities. Rather, the constructs that mediation our phenomenological and conceptual experiences of material entities – constructs of nature and human nature as well as community and equity– so enable and limit how we think with those constructs governs how we engage with the world, and how we materially remake the world to

[47] Peterson, *Being Human*, 209–212.

conform to our circumscribed constructs of nature and human nature. I restate this here so as to be transparent about my presumptions: in reconfiguring constructs of human nature we can change social practices.

As it is the responsibility of theology to bring a hermeneutic of suspicion to theological doctrines, which includes theological and philosophical anthropology, it is important to take seriously questions such as whether human nature is given or constructed. I am in agreement with Peterson that humans do have some identifiable innate qualities and predilections but that culture is a potent force in enabling and constraining human action. Peterson's work to develop chastened social constructs of humanness is excellent. I build on her work by adding three additional constructs that potentially overcome the anthropocentrism and individualism of conventional constructs of humanness. What I am particularly interested in contesting is the construction of human nature that is assumed within pubic and government policy discourses, which is the human being as autonomous, rational agent maximizing actions for his/her self-interests. It is a construct that gained ascendency in the West in the twentieth century due more to the needs of political and economic institutions rather than its veracity. Thus, human action is identified by the linked characteristics of rational thought, independence, and self-interest. What is not a widely acknowledge, within either public discourses or the more specific environmental activism discourses, is that the construct of human nature as autonomous, self-seeking, rational agent often fails to predict human behavior in economics and other domains. Moreover, scholars in fields such as behavioral economics, cognitive psychology, and political science have shown that humans often act against their self-interest in marketplaces, and elsewhere, and their economic activities are characterized as much by emotions as by reason. In addition, while the Enlightened found humans distinct (*sui generis*)in our ability to reason, many scientific fields

have demonstrated that problem solving and language are not exclusively human abilities. Nevertheless, a dominant construction of human nature is that we are innately rational and self-seeking. Contemporary culture seems to relish this understanding, perhaps because it gives tactic permission to put our own interests first when we wish to. The construct of the maximizing, self-interested rational agent is a partial truth.

As the context of this reconstruction is that of water protection and conservation, it is also important to confront the assumption of the effectiveness of individual action to mitigate or staunch environmental harm. Such an assumption is easy to miss due to the individualism woven into the warp and weft of Euro-western culture. We do not even notice that consumer-based approaches, claims to the "rights of nature," and resistance to government regulation of consumption and pollution are deeply intertwined with the construction of autonomous, rational agent. Individual responses to ecological crises are unrealistic and ineffective. Despite the common Euro-western mythos, individual humans cannot change or repair the world. As Reinhold Niebuhr wrote in *The Irony of American History*, "Nothing we do, however virtuous, can be accomplished alone…."[48] In reality, human existence is a communal one, and we are innately able, and even predisposed, to collaboration. Humans have evolved as a species by living within communities, sharing resources, and coordinating labor. To be sure, our ability to solve problems collaboratively has enabled us to become the apex species of the ecosphere.

Here, I offer three alternative constructs of human nature. As with chapter five, my reconstructions are directed both to water studies and the field of ecotheology as part of an alternative approach to water overconsumption and pollution. For the larger, nontheological ecological conversation, the value of exploring an explicitly theological reconstruction of human

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[48] Reinhold Niebuhr, *The Irony of American History* (Chicago: University of Chicago Press, 2008), 63.

nature reveals the incongruity between the dominant Euro-western construction and the idea of human nature in the biblical tradition as well as offering alternative reconstructions. In addition, these two results may then lead to a confrontation and dis-mantling of dominant Euro-western constructions of human nature.[49] For Christian theists, value lies in making plain this incongruity as well as making visible an eisegesis of duality and anthropocentrism into the biblical corpus and Christian doctrine.[50] Such an unveiling may lead to confrontation and dis-mantling of the dominant secular constructs of human nature and may bring about alternative constructions. Further, such an exploration invites theists to revise Christian theological doctrines that depend on dualistic and anthropocentric readings of the biblical corpus.

Before proceeding, it is important to again take note of the presence of both *green texts* and *grey texts* in the biblical corpus.[51] As I wrote in chapter five, green texts are those that bear witness to the intrinsic value of nature and human embeddedness within it and grey texts are texts that give primary attention to human interests and prioritize human history, prosperity, and salvation over, and sometimes at the expense of, nature. As I stated before, this is to be expected as the Bible is not a univocal witness, and it does not diminish the worth of green texts. What the fact of green and grey texts means is that contemporary theists must approach the corpus with a

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[49] I have used a hyphen here to emphasize my meaning, which is the disrobing and confrontation of mantle of authority given to the dominant constructions of nature as a material object, a separate, unspoiled space, or a stockpile of raw materials.

[50] H. Paul Santmire, "Partnership with Nature According to the Scriptures: Beyond the Theology of Stewardship," *Christian Scholars Review* 32, no. 4 (2003), 395; Warren S. Brown and Brad D. Strawn, *The Physical Nature of Christian Life: Neuroscience, Psychology, and the Church* (Cambridge: Cambridge University Press, 2012), 11–12. doi.org/10.1017/CBO9781139015134. In several publications, Theodore Hiebert has discussed how Patristic and modern thinkers have read dualism and anthropocentrism into the Hebrew Bible. The most detailed of these is found Hiebert's "The Problem of 'Nature' in the Bible," in *The Yahwist's Landscape: Nature and Religion in Early Israel* (New York: Oxford University Press, 1996), 3–29.

[51] Norman Habel, *An Inconvenient Text: Is a Green Reading of the Bible Possible?* (Hindmarsh, SA: ATF (Australia), 2009), 115. www.jstor.org/stable/j.ctt163t8xc.

hermeneutic of suspicion and a willingness to analyze and reconfigure how they understand the biblical idea of nature in light of new circumstances in the world, such as eco-crisis.

Another matter to restate is that nature and human nature are understood quite differently in the Hebrew Bible and New Testament than in contemporary culture. Nature is understood to be a unified whole, valued for its own sake, and a dwelling place of all living entities and God. Human beings are understood to be non-dichotomous and embodied.[52] Additionally, the contemporary assumption of either individualism or a divorce between nature and culture are incompatible with the biblical view. Indeed, the texts assume that human existence is community-based and all human beings are obligated by God to respect and care for their neighbor. As I stated in chapter five, the dichotomies between matter and spirit, mind and body, and humanity and nature that became a part of the Christian tradition were not a part of the Jewish and early Christian worldview. Later interpreters and theologians introduced some of these dichotomies, such as the immateriality of the soul, into Christianity during the Patristic period. More recently other dichotomies, such as materialism and nature/culture, have been read into doctrinal and textual interpretations by translators, theologians, philosophers, and scholars. These dichotomous and anthropocentric interpretations have become confused with the original idea of nature and human nature.[53] Moreover, the biblical witness is neither naïve nor cynical with regard to human nature. It realistically portrays the human condition as a continual struggle against self-deception, sin, and inequity. However, the texts also make clear that human beings are innately able to refrain from such actions. It is important to give attention to the ability of

[52] Hiebert, *Yahwist Landscape*, 35–37.
[53] Brown and Strawn, *The Physical Nature of Christian Life*, 16. Theodore Hiebert, "Retranslating Genesis 1–2: Reconnecting Biblical Thought and Contemporary Experience," *The Bible Translator* 70, no. 3 (2019): 261–273. doi:10.1177/2051677019877229.

human beings to resist self-deception and self-seeking actions because it indicates that human nature is not so one sided as the contemporary construction of human nature claims. While some may assume that the biblical view of human life is in agreement with the Hobbesian view —"solitary, poor, nasty, brutish, and short"—this is not the case. The biblical view is much closer to that of David Hume, who argued that, "Heaven and hell suppose two distinct species of men, the good and the bad. But the greatest part of mankind float betwixt vice and virtue."[54] Therefore, I want to underscore at the outset of my reconstructive work that the dominate Euro-western construct of human nature as individual, autonomous agent has been read into the biblical text, and a closer reading of the corpus offers insights useful to reconstructing human nature.

Lastly, as I stated in chapter five, there is a large body of work that has focused on Genesis 1:26–28 regarding whether the verses indicate that human nature is ontologically or functionally distinct. I hold that an interpretation of human nature as ontologically distinct and superior is mistaken as it is inconsistent with the larger narrative of Genesis as well as that of the biblical corpus. It is also inconsistent with the original cultural Jewish context of the Hebrew Bible. Further, regardless of whether the *imago Dei* or the use of the verbs to rule over (*radah*) and to subdue (*kabash*) do indicate that human nature is distinct from other living beings, the text most certainly does not give license for the abuse or exploitation of other living beings or the ecosphere. In addition, I acknowledge that the first and second creation narratives in Genesis indicate two different views of the role of human beings. However, I believe that the two views

[54] David Hume, *Selected Essays*, ed. Andrew Edgar, and Stephen Copley (New York: Oxford University Press, 1998), 327.

complement rather than contradict one another. I will discuss this more in below with as it relates to my third reconstruction.

HUMAN NATURE AS COLLABORATIVE

Twenty-first century human beings are the product of natural selection over hundreds of thousands of years. Our hominid ancestors were highly adaptable to a great variety of climates and terrains, which is how it is that human beings live on every continent on the planet, even (seasonally) in Antarctica. Our adaptability is a product of biological assets, such as dexterous hands and omnivore digestive systems, as well as our social systems. Our cognitive systems are biological, but they are also unconditionally produced by socialization. We learn to speak and think by interacting with our parents and peers, and later through complex social interactions with professional teachers, coaches, family, and schoolmates. Our social nature gives us the ability to work collaboratively, which accounts for formidable accomplishments such as the construction of Ziggurats in Mesopotamia. This collaboration pre-dates any history we have from when humans shifted away from nomadic existence and settled in villages, which tell us that our collaborative natures are not adaptations to the settled agriculture arrangements. Rather, it is our ability to live communally and farm collaboratively that produced food surpluses and later allowed for living in villages and cities. Further, our willingness to work mutually, reciprocally, and even altruistically, with both kin and non-kin is ubiquitous among humans but is relatively uncommon in other species.[55] Not only do we collaborate with non-kin, but we collaborate by proxy and with strangers we do not share times zones, culture, or creed with.

[55] By collaboration, I am indicating much more than mutual accommodation or cooperation and interdependence that is common among nonhuman animals. Many species share interdependence (some call it symbiosis). Other species have high levels of cooperative behavior such as murmurations and swarms. There are also cases of species pairs that live proximally to one another as a protective strategy, which I would characterize as cooperative and interdependent. However, what I mean by collaborative are mutual interactions that are directed towards a common goal and are characterized by indirect or delayed benefit, reciprocity, and organization.

Indeed, our ability and willingness to collaborative across blood-ties, extensive distances, and even decades and centuries is perhaps the most *sui generis* thing about human nature. Yet, while our collaborative nature has given human beings a great evolutionary advantage, it is not without costs to other species. It is our ability to solve problems collaboratively, with kin, neighbors, strangers, and even enemies, that has allowed us to become the apex species of the ecosphere.

Before I rush past this detail, let me unpack the significance of understanding human nature as collaborative. In the West, much of the discourse within environmental action is framed as caused by conscious, rational actions made by individuals. As I stated above and in chapter one, this frame is not accurate nor helpful. All human practices are collectively ordered to a greater or lesser extent. Perhaps because we experience ourselves as distinguishable from our own larger communities, such as family or society, we have the illusion that our everyday activities are independent and freely chosen. In Euro-western culture, the emphasis on individualism has also shaped conceiving of human practices as individual and independent of other human beings, of other species, and of the ecosphere. Practices such as learning, cooking, and writing are assumed to be individual activities. But these practices all rest on prior actions taken by others, which themselves depend on trust and collaboration between agents, even between strangers, and networks of agents. However, everyday acts as well as great achievements are most often collectively ordered actions.[56]

The reconstruction of human nature as collaborative confronts the construct of human nature as individual, autonomous agent. Instead, human nature is characterized by mutuality,

[56] Many great moments in human history seem to be acts of individuals but are only achieved through collaboration and sharing of resources and knowledge. For example, great innovations such as vaccinations depended not only on funding and material resources such as laboratory facilities but also need human volunteer to test the efficacy of the vaccinations. Great exploration, from Lief Erickson to Ernest Shackleton, has always depended on shared knowledge and collaborative labor. Technology, science, literature, and commerce are all collective activities.

interdependence, and cooperation. Further, humanity is not an aggregate of individuals but is a multitude that has unity even as it has particularity. Reconstructing nature as collaborative reclaims and reimagines the humans as person-in-community, who is embodied, terrestrial, and relational. Additionally, this construct offers a countervailing narrative to the dualism of conventional constructions of human nature that have divorced nature and culture and presumed that human beings are ontologically distinct and superior.

Reconstructing human nature as collaborative is consistent with how the biblical authors understood human nature. As I stated above, in the biblical view, humans are always understood as a people who are embedded within and dependent on their community, and therefore human existence is not individual but community-based. The assumption of individual autonomous agent has been read into the bible but is decidedly discordant with how the bible understands human nature and existence. For example, while they are often identified with an individual, all of the covenants that God makes are with individuals and their descendants, and later covenants are made with Israel or humankind as a community. In addition, many of the great undertakings in the narratives are community actions. Indeed, the most significant events of the narratives, such as the Exile and return of the Southern Kingdom, are not individual but communal actions. Similarly, sin, transgression, and inequity are understood as individual acts as well collective ones.[57] In the Hebrew Bible, prophets warn not individuals but the people that the community has broken covenant. In the New Testament, not only are human existence and sin understood as

[57] In the Bible, the prophets, including Jesus, continually contest sin, transgression, and inequity. Sin is a general term for moral failure, specifically failure to obey God's commandments. Transgression connotes breaking the trust of others, particularly the breeching of a relationship that presumes trustworthiness, such as neighbors. The idea of inequity is rooted in crookedness, which implies a thing that is bent or crooked that should be upstanding or straight. Inequity is usually understood as the unjust gaining at the expense of another.

communal but salvation also is communal.[58] Likewise, the biblical authors understood human beings as embedded and interdependent with the ecosphere. In chapter five, I stated that human existence is not understood as taking place apart or outside of nature but as dwelling within a unified, integrated world. Moreover, humans depend on the providence of God given through nature, such as freshwater and cereal crops, and nature depends on humans to "till and keep" the land. (Genesis 2:15)[59] Below, I will explore the obligation of human beings to nature but note it here because it reveals the interdependence between nature and humanity. The biblical authors understood human existence as characterized by community rather than individuality, and by interdependence rather than independence.

HUMAN NATURE AS BOTH SELF-SEEKING AND SELF-LIMITING

Dis-mantling the construct of human nature as innately self-interested is needed in ecological discourses as the construct is so prevalent among environmental activists' proposed remedies. Many forms of environmentalism are unaware that interventions and prescribed solutions rest upon assumptions that human self-interest is the most effective motivation for action. This newer form of environmentalism, exemplified by scholars and authors such as Garrett Hardin and Paul Hawken, theorizes solutions based on the model of *homo economicus.* However, narrow constructs of human nature as motivated almost exclusively by self-interest do not hold true, either of the individuals or of culture. Two examples alternative stance on innate human selfishness are those of Xavier Le Pichon and Michael McCullough. Le Pichon, a geophysicist and founder of the L'Arche community, argues that humans are as much characterized by their

[58] David M. Rhoads and Barbara R. Rossing, "A Beloved Earth Community: Christian Mission in an Ecological Age," *Currents in Theology and Mission* 43, no. 2 (April 2016), 13–14. Each author has made this point in other publications.

[59] Genesis 2:5 also expresses an understood central role of human beings to cultivate the land (what can be understood as gardening or low intensity farming).

ability to empathize and care for one another as their selfish desires.[60] A prolific author in the field of psychology, McCullough has argued that human nature is characterized as much or more by the ability to forgive as by desire for vengeance.[61] There are numerous other scholars who propose a myriad of characteristics that are defining of human nature. They agree that defining human nature as innately self-seeking is a one-sided and flawed understanding of human beings.

As I stated above, human beings evolved as a species by living within communities. These communities were small and survival depended on mutuality, cooperation, and fair allocation of labor and resources. Even in post-modern, highly urbanized and industrialized cultures, pro-social behavior is rewarded and lauded. Indeed, many scholars, including Peterson, have affirmed that altruism is common in humans.[62] In addition, as scholars in several field have established, selfishness is often punished, sometimes directly and sometimes indirectly.[63] Selfishness might endanger a community and is often been met with counter measures, such as loss of status or for egregious offenses, banishment. Even as societies grew larger and more

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[60] Le Pichon argues that innate altruism can be seen in the archeological record, such as the skeletal remains a Neanderthal male known as Shanidar 1. Discovered in the 1950s by an American archeological team in northern Iraq, Shanidar 1 was found in a cave with seven other adults and two infants. What is remarkable about Shanidar 1 is that, while he was between 35–45 years old when he died, he had several severe injuries that during his life including a fractured skull that likely resulted in severe disabilities. Yet, Shanidar 1 was able to reach an advanced age. Le Pichon explains that scholars have theorized that Shanidar 1 must have been well cared for by his social group, which would have been an uncommon burden in the unforgiving environment in which he lived. Many other remains have been found around the globe, and some demonstrate the care and empathy, leading Le Pichon and others to conclude that humanity has an innate ability for empathy and altruism. See Xavier Le Pichon, "Ecce Homo: To Welcome Suffering is the Sign of Our Humanity," in *Spiritual Information: 100 Perspectives on Science and Religion,* ed. Charles L. Harper, Jr. (Philadelphia: John Templeton Press, 2009), 457–462.

[61] Michael McCullough, *Beyond Revenge: The Evolution of the Forgiveness Instinct* (San Francisco: John Wiley & Sons, 2008).

[62] Peterson, *Being Human*, 164–167.

[63] For example, Michael E. McCullough, Robert Kurzban, and Benjamin A.Tabak, "Evolved Mechanisms for Revenge and Forgiveness," in *Human Aggression and Violence: Causes, Manifestations, and Consequences, eds.* Mario Mikulincer and Philip. R. Shaver (Washington, DC: American Psychological Association, 2011): 221-239; Ernst Fehr, "On the Economics and Biology of Trust," *Journal of the European Economic Association* 7, no. 2–3 (May 2009): 235-266. doi.org/10.1162/JEEA.2009.7.2-3.235; and Henrich, Joseph, Robert Boyd, Samuel Bowles, Colin Camerer, Ernst Fehr, and Herbert Gintis, *Foundations of Human Sociality Economic Experiments and Ethnographic Evidence from Fifteen Small-Scale Societies* (New York: Oxford University Press, 2004). doi.org/10.1093/0199262055.001.0001.

complex, human have retained a bias towards altruism and collaborative action and against self-seeking. This research by no means negates that selfishness is also common in human economic, political, or social interactions. What is increasingly clear is that both self-limiting and self-seeking are innately human.

What is more, human action is context dependent, and socially conditioned. What might be interpreted as altruism in one context is understood as normative in others. For example, the idea of sacrifice, which is important in the Judeo-Christian tradition and is a significant theme within environmental activism. As ecological action is largely constructed as an individual as well as collective sacrifice of creature comforts and conveniences, Cheryl Hall has examined how environmental sacrifice has been socially constructed. Hall explains that sacrifice is encoded by variables such as the degree of constraint the sacrifice comes with, the quality of difficulty it requires to sustain, and willingness/reluctance to bear it. Through her examination of sacrifice, Hall is able to show that human nature is not defined by a binary of egoism and altruism. Developing a more complete construct of human nature as both self-interested and self-limiting is an important step in overthrowing harmful social constructions of humanity as homo economicus, the rational agent maximizing self-interest. Similarly, Peterson has examined the social construction of ecological sacrifice, and has suggested reconstructing it by contrasting it with parental sacrifice for children.[64] Peterson writes, "Most of us give up things we value, large and small, all the time, for our children, our faith, and our careers. These sacrifices are not only

[64] Cheryl Hall, "Freedom, Values, and Sacrifice: Overcoming Obstacles to Environmentally Sustainable Behavior," in *The Environmental Politics of Sacrifice*, eds. Michael Maniates and John M. Meyer (Cambridge: MIT Press, 2010), 61–86.

accepted, but often are essential to making our lives meaningful and pleasurable."[65] Peterson uses the example of how sacrifice is understood in religious communities. Peterson writes, "Religious sacrifice thus ranges from ordinary and rather trivial offerings to extraordinary practices that involve great effort and even bloodshed."[66] Peterson also distinguishes the difference between expected and accepted sacrifices against sacrifices considered to be voluntary or extraordinary. Many expected and accepted sacrifices are difficult and even onerous, yet understood by the individual as an ordinary duty or responsibility. In contrast, less demanding sacrifices, when encoded as voluntary or not commonplace, are considered to be unacceptable. Through examining the social construction of sacrifice, the complexity of human nature is made all the more clear, and, as Hall showed with altruism/egoism, human nature should not be understood as a binary of either self-limiting and self-seeking but as a containing both tendencies.

Reconstructing human nature as both self-seeking and self-limiting is consistent with how the biblical authors understood human nature. As I wrote above, the biblical authors understood human nature as having a tendency toward moral failure. However, this is coupled with an understanding of human nature as innately able to self-limit and therefore refrain from sin, transgression, and inequity. If humans did not have the capacity to resist temptation, God would not have left them alone in the garden. Indeed, humans are not only capable of self-limiting, God expects humans to do so, which texts such as Genesis 4:7 and Romans 7:5–16 make explicit. The ability to self-limit is the foundation of the laws found in Exodus, Leviticus,

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[65] Anna L. Peterson, "Ordinary and Extraordinary Sacrifices: Religion, Everyday Life, and Environmental Practice," in *The Environmental Politics of Sacrifice*, eds. Michael Maniates and John M. Meyer (Cambridge: MIT Press, 2010), 112.
[66] Peterson, "Ordinary and Extraordinary Sacrifices," 9.

and Deuteronomy. The social laws against libel, usury, and adultery presume both a self-seeking and a self-limiting human nature. In addition, the expectation to self-limit is never withdrawn by God even when self-limitation and refraining from sin, transgression, and inequity come at great cost. Humans are expected to stumble and even fall but are also expected to continually resist self-seeking. Interestingly, as I explained above, the biblical text has already extended the expectation of human self-limiting in relation to care of nature and therefore it is not necessary for contemporary ecotheology to do so.

HUMANS AS NEIGHBOR WITH PARTICULAR COMMISSION

In chapter five, I offered a reconstruction of nature as existing for its own sake, existing as whole and integrated, and as a space where God dwells with the whole of the world. It is acceptable, in fact, it is necessary, that we recognize that the ecosphere was created by God, is valued for by God, and that God participates with the whole of the world. Therefore, in chapter five, I proposed a third reconstruction of nature as both neighbor and neighborhood, which reconfigures nature as a shared home. It also reconstructs the nature-human relationship as one that is characterized by respect, mutuality, and moral obligation. I further suggested that nature as neighbor and neighborhood means that we must extended dignity and justice to the ecosphere as a totality and to the multitude of abiotic and biotic entities that dwell within it because the relationship between neighbors entails an obligation to care for and protect nature.

What does it mean for human beings to be understood as neighbor, and does it mean that humankind is indistinguishable from other living beings? I believe that it means that we understand ourselves in relation to the communities we dwell within, and that we are differentiated not by ontology but by abilities and obligations (duty/commission). In Euro-western culture, humans have traditionally been constructed as *sui generis*, either in having a unique or superior ontology or having a unique relationship with the Divine that nature does not

have. However, in light of my first two reconstructions of human nature—that humans are distinct in that we are innately collaborative and we are distinct in our ability to self-limit, most notably that we can self-limit with other species, over great distances, and for great durations of time—we might then further reconstruct humans as neighbor with a particular function. Said another way, we may reconstruct human nature through understanding what is unusual about human nature—the ability to collaborate and to self-limit—in conjunction with what our relationship is to our communities. Within the framework of relationship and abilities, we may then understand what our obligations are, which also tells us what our role in the world is.

As I discussed above and in chapter five, a key discussion amongst ecotheologians has been what to make of Genesis 1:26–28. In my view, the Genesis 1–2:4a narrative is a liturgical not etiological text. Rather than being ontologically distinct from other living beings, the texts reveals that human kind are created for a particular function. This may be discerned in two ways. First, it is recognized that human being are created in the image and likeness of God. The text is indicating that humans are to conduct themselves as God does, which is to love and care for the whole world with lovingkindness, fidelity, and justice. Second, human beings are to act as God commands them to, which is to take charge and undertake responsibility for nature.[67] It is in a close reading of the verbs verbs *radah* (רָדָה) and *kabash* (כָּבַשׁ) and an understanding of the original Jewish context of Genesis that a clearer interpretation is possible. While the verbs *radah* and *kabash* do convey the sense of presiding over and controlling a land or population, the cultural context of First and Second Temple Judaism understood the king as God's representative

[67] Theodore Hiebert, "Retranslating Genesis 1–2: Reconnecting Biblical Thought and Contemporary Experience," *The Bible Translator* 70, no. 3 (2019): 266–267. doi:10.1177/2051677019877229.

and not—not as monarch his/her own right.[68] As such, the function of human beings in the Genesis 1 narrative is that of servant-king with a particular commission. Genesis 2:4b–3:24 provides an alternative but complimentary interpretation of the function of humankind, which is to care and to keep the earth. Hence, I have incorporated my functional interpretation of the two Genesis narratives into my reconstruction of human nature as neighbor. Thus, we are not just neighbors, but neighbors with a commission. Our commission is to support the flourishing of the whole of the world. We are to serve and to keep nature as our neighbor and neighborhood.

Reconstructing human nature as neighbor with a particular commission is consistent with how the biblical authors understood human nature. As I wrote above, the biblical authors understood human as embedded within nature, and the natural caretaker and keeper of nonhuman animals and the land. For the Christian, the obligation of care and justice between neighbors has a long tradition. As I stated in chapter five, the interpretation of the Genesis 1:26–28 verses as ruling over nature as an absolute monarch is not original to the text. In addition, a close reading the second creation narrative shows that animals are not created for humanity but human beings do have a specific purpose. In Genesis 2:5, the text states that "there was no one to till the ground," indicating that a fundamental vocation of humanity is as gardener or farmer. Biblical scholar Theodore Hiebert has suggested an updated translation of Genesis 2:15, which has typically been translated as: "The LORD God took the man and put him in the garden of Eden to till it and keep it." (NRSV) Hiebert suggests: "The LORD God took the human and settled him in the garden of Eden to serve it and to take care of it."[69]Hiebert explains that the verb 'ābad has close connections to the servants of masters and kings, and is also commonly used for those who

[68] Phyllis A. Bird, "'Male and Female He Created Them': Gen 1:27b in the Context of the Priestly Account of Creation," *Harvard Theological Review* 74 (1981): 137–44.
[69] Hiebert, "Retranslating Genesis," 270–271.

serve God. Moreover, when the verb is used in a religious context, it has the sense of "devotion, attentiveness, and commitment."[70] In addition, throughout the biblical corpus, there is a consistent understanding of human kind as having a particular obligation to respect, conscientious attending, and care for nature. To reconstruct human beings through the lens of function rather than ontological essence is consistent with both a close reading of the text and the larger corpus, and with the context of how the biblical authors understood human nature and purpose.

Having examined the traditional exegesis of Genesis 1:26–28 that has linked human dignity and supremacy with the *imago Dei* and a special relationship with God, we must now reconsider the idea that humans alone manifest or participate in holiness. In addition, the separation of nature and culture has reinforced the inclination to see humanity as participating in holiness or even becoming holy, and disallow for holiness in nature except for remote, unmodified spaces, such as mountaintops. However, we must now extend the holiness long applied exclusively to human nature to other living things, or to the ecosphere as a whole. This is for two reasons. First, as I wrote in chapter five, the biblical corpus makes clear that the whole of the world was created by God, is valued for its own sake, and is continually care for and protected by a faithful and relational God. Second, holiness is not inborn to an entity or a space but is made holy through God's presence or by an act of God. In understanding that nature is not holy by virtue of being remote and unmodified nor are human beings manifestations of God's holiness by the *imago Dei*, we must now extend the holiness long attributed exclusively to human nature to other abiotic and biotic entities, or to the ecosphere as a whole.

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[70] Hiebert, "Retranslating Genesis," 271.

Conclusion

In this chapter, I have discussed how there are dominant social constructs of humanity that are part of a larger construct of what we are and how we should be in the world. I examined the dominant dualistic constructs of human beings as rational, self-interested individuals, and how these constructs are biased towards the human as unique and superior, and emphasize individualism. The purpose of this chapter was to tease out how Euro-western culture constructs both human nature and the proper relation is between humanity and the natural world. To understand what human nature is, I examined how it is that the West has come to the current tacit understandings of human nature. Through exploring the Euro-western foundations and commitment to individualism, I have identified what might be called additional "roots" that have not been as well explored as anthropocentrism, and the tensions/ramifications that are connected to them. They deserve a great deal more investigation by ecotheologians and other scholars, in addition to exploration by activists and policy makers; my work here may serve as a launching off point.

As a precursor to reconstructing water, I have also offer three alternative reconstructions of human nature, which understand human kind as person-in-community, who is embodied, terrestrial, and relational. Moreover, human nature is reconstructed as having a particular function but not a distinct ontological nature and a collaborative and both self-seeking and self-limiting. As I stated in the opening of this chapter, in the water literature few scholars have stepped outside the modern and postmodern constructs of human nature as autonomous, or explored the origins of either theological or philosophical anthropologies to better understand how Euro-western industrial societies conceptualize human nature in terms of anthropocentrism and individualism, which in turn dictates a narrow construction of the relationship between water and humans. One of ecotheology's notable contributions to the water literature may be in making

visible the unconscious and unchallenged constructs of human nature. Ecotheologians and REMOs might offer appropriate, eco-centric, and relational reconstructions of human nature. Such reconstructions are a necessary precursor to reconstructing water. In the next chapter, I will take up social constructions of water and how it might be reconstructed so as to cultivate and reinforce more sustainable and just engagements with water.

Chapter Seven: Inside the River—Water Reimagined

What can I say that I have not said before?
So I'll say it again.
The leaf has a song in it.
Stone is the face of patience.
Inside the river there is an unfinishable story
2015) and you are somewhere in it
and it will never end until all ends.

—Mary Oliver, "What Can I Say"[1]

Introduction

The governing hypothesis of this dissertation is that transformation of water use and consumption will not be initiated as a consequence of implementations of scientific knowledge, technological innovations, capital spending, ethical systems, or humanitarianism.[2] This is because the conventional water constructs of Euro-western culture, and therefore also the narratives and worldviews that are grounded in them, are not reliable, acceptable, or evocative.[3] Transforming how we engage with waters happens through reimagining water. The process of reimaging water is itself comprised of water awareness, literacy, and reconstruction. To recall, in chapters one and two, I had stated that water-focused ecotheological communities must become water aware and water literate for ecotheological discourses and practices to be genuine

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[1] Mary Oliver, "What Can I Say," *Swan: Poems and Prose Poems* (Boston: Beacon Press, 2010), 1.

[2] In this dissertation, I have chosen to use the term *culture* to signify both the (i) absolute sense, that is culture as the collectively produced and shared concepts, constructs, conventions, and commitments of a large human population and the (ii) descriptive sense, that is culture as a particular form that has or is occurring in a particular socio-temporal location. Several scholars in water studies use the term *society* to connote both a community of humans that has shared concepts, constructs, conventions, and commitments (analogous to sense (i) of *culture*) and also, more often as *societies*, which connotes particular instances of those collective communities (analogous to sense (ii) of *culture*).

[3] Here, I am borrowing the words *reliable*, *acceptable*, and *evocative* from Walter Brueggemann. Brueggemann contrasts the counternarrative of the prophetic imagination with the narrative of the traditional powers, which he terms *royal* or *pharaonic*. A primary characteristic of the royal narrative is its inability to keep its promises of safety and fidelity to God. Similarly, the narrative of the water industry makes false claims of sustainability and equity. Hence, the prophetic judgment is understood as disruptive truth-telling through "asserting that false claims to authority and power cannot keep their promises." Brueggemann, *The Prophetic Imagination*, 2nd edition (Minneapolis: Fortress Press, 2001), 11.

contributions to protecting, conserving, and restoring waters. By water aware, I indicated an intentional practice of looking for and listening to many waters, and to being cognizant of humanity's complex engagements with water. By water literate, I indicated an ability not only to see and hear water complexities, but to decode water as well as to read the constructs that mediate our interactions with water. However, by itself water awareness and literacy will not transform individual or collective everyday practices, water management practices, nor government water policies. To reimagine water, it is necessary to question and dismantle tacit and explicit conventional knowledge of water, that is the water that we think *with*. Then it is possible to articulate an alternative social construction of water. This threefold process reimagines water. In chapters one and two, I discussed water awareness and literacy, and in chapters five and six, I discussed the social construction of nature and human nature, criticism and reconstruction of each from the field of ecotheology, and introduced my own reconstructions of each. In this chapter, I return to a discussion of reimagining water.

Grounding water-focused ecotheology or advocacy in reimagining social constructions of water may seem inadequate and academic. Indeed, given the stark realities of millions of people who lack fresh water, it may seem quite indulgent to stop to explore the constructed meanings of water or search for alternative ways of understanding and representing water. However, as Lynn White, Jr. observed of modern presumptions about nature and humanity, the dominant social construction of water as material substance is a fundamental obstacle to effective solutions to water crises, such as shortages, privatization, and pollution. Therefore, those who seek to conserve or protect water, or make access more equitable and sustainable, will founder in their attempts to confront crises unless they understand that water is both socially constructed and has multiple ontologies, each of which produces its own water-human entanglements. In addition, it

is important to understand how cultures purposefully transform themselves. As Swidler, Sewell, and Peterson have established, social change is driven not by values but by reconfiguring systems of meaning that are outdated or circumscribed.[4] I propose that the most straightforward way to address the world's many water crises is to influence transformation through both becoming water aware and literate and in being an instigator of alternative water constructs and counternarratives, that is reimagination.

As I wrote in chapters three and four, faith communities such as churches, synagogues, and mosques have great advantages if they choose to become instigators of social change and water-focused ecotheology. Perhaps the greatest strength, which is grounded in the biblical prophetic tradition, would be their understanding of how transformative judgment and articulating alternatives can be. Brueggemann has written that the role of biblical prophets was to call Israel to account for transgression and inequity, and to instigate radical social change. The prophets, Brueggemann tells us, "understood a great deal about how change is affected."[5] Brueggemann explains that what the prophets grasped what eludes so many today, which is the power of language, of poetry, of hope. And because the prophets understood the power of language and imagination, they knew that transformation happens through narrative evocation and not doctrine.[6] I contend that this is a vital insight that is missing in the discourse on water crises. Thus, I adopt Brueggemann's model of prophetic imagination through the dual tasks of judgment and hope. In the instance of water advocacy, the task of judgment consists of water awareness and water literacy, and the task of hope consists of reconstructing water and

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[4] Ann Swidler, "Culture in Action: Symbols and Strategies," *American Sociological Review* 51, no. 2 (1986): 283. doi.org/10.2307/2095521; and Anna L. Peterson, *Everyday Ethics and Social Change: The Education of Desire* (New York: Columbia University Press, 2009), 113, 125–137.
[5] Brueggemann, *Prophetic Imagination*, xiv.
[6] Brueggemann, *Prophetic Imagination*, 15, 18.

generating counternarratives. I will first review insights from water scholarship and reconstructions of water. Next, I will offer my own assessments and reconstructions, which may serve as starting points for counternarratives. My reconstructions are founded on analysis from water scholarship and ecotheology, they incorporate my reconstructions of nature and human nature discussed in chapters five and six. They are: water as nexus, water as unfinishable, and water as a part of holiness. They represent a dismantling of the conventional knowledge that we think with, and also an articulation of an alternative way to know and represent water, and therefore are an example of reimagining water. In adopting Brueggemann's model, I wish to demonstrate that the work of ecotheology is similar to that of the biblical prophets. By calling out unjust or harmful social practices that have become normalized or go unseen, prophets disrupt convention and challenge the accustomed reality. Moreover, through symbol and poetry, they couple their judgment with hope, and thus evoke alternative possibilities that produce an alternative, energizing consciousness. Similarly, water scholars and ecotheologians make visible and decodable how water is constructed in circumscribed ways that have enabled and encouraged overconsumption and abuse. Reconstructing water similarly dismantles conventional constructions of water as a scarce natural resource or disenchanted, homogenous commodity, and articulates alternative understandings and engagements.

Reconstructions from Water Scholarship

Water scholarship provides ecotheologians and water advocates with an alternate way of understanding the many forms of water in ever varying contexts. The work of water scholarship can be valuable in distinguishing between water constructs, material and conceptual waters, water and water-human relations, and water uses and hidden waters. This in turn makes possible social reconstructions of water. Scholars not only are contesting what water is but the methods by which we can understand and represent it, or water-human relations. However, as the body of

water literature is large, stemming from many fields—and is very often directed towards addressing the specific concerns of a discipline, I will limit my discussion to the main propositions that are relevant to water-focused ecotheology.

The two primary propositions of water scholars are that all knowledge of water is socially constructed and that water has multiple ontologies. As with nature and human nature, water is socially constructed. Not only is the knowledge of water socially constructed but the very same constructs in turn are used in the further inquiry into water, or water problems, or are used to represent water. Water knowledge, whether scientific or non-scientific, explicit or tacit, always reflects and reinforces the power structures and everyday practices of which it is already a part. Thus, as I have already stated, when constructs become so dominant that they are taken as established fact, the construct becomes hypostatized or reified. In turn, they become ideas that we think with, which leaves little room for alternate considerations of water. However, the idea that water is socially constructed, and constructs come to dominate and even limit other meanings is a normal part of larger processes of abstract thought and discourse. Therefore, that water is socially constructed is neither good nor bad. It does, however, create an ongoing obligation to unpack, challenge, and reconstruct the water that we think with. The value in water research bringing the process of social construction of water is to make such social processes visible and legible.

WHAT EXACTLY IS WATER?—WATER THEORIZED

The second primary proposition is that water has multiple ontologies. What does this mean? Water scholars have shifted from a premise of the universality and homogeneity of water to a critical inquiry into how the particularity of forms and states of water materialize ontologically different waters, and how the particularity of the engagements between and among distinct

waters and distinct cultures materialize different entanglements.[7] What scholars have come to see is that, while water does have a consistent, predictable set of properties and forms, its actual manifestations in time and space are always inflected by other concurrent entities (abiotic and biotic). There are two reasons for this: water's transmutability and mobility. Materially, water is highly transmutable, which makes it reflective of its environs. Also, due to water's capacity to dissolve, absorb, convey, and deposit materials, it is a catalyst for breaking down and building up materials that it contacts. In addition, water is relational. Water continually moves within and between other entities (abiotic and biotic), which functions to connect or separate them. Watery connections make relations possible, at scales both great and minuscule. Watery connections also transform both water and what is becomes connected/disconnected to. Thus, water continually makes and unmakes multifarious connections and assemblages, materially, socially, and conceptually.[8] Water scholars reconstruct water as possessing material, discursive, and conceptual ontologies, which in turn shape and are shaped by engagements with human culture and subsequently become new water entanglements (that is, water-human relations). Water has multiple ontologies because it is transmutable, mobile, and relational.

Water scholars have also critically analyzed and reconstructed how water is understood as a part of nature, and therefore culture as being independent of water. In much of the twentieth century, scholars in the humanities and social sciences had given little attention to water as an important historical factor in the development of human culture. However, recently some scholars, such as historian Karl Wittfogel, have affirmed that water has been foundational to

[7] In anthropology and geography, water bodies and waterworks have been employed as a comparative device between cultures based on the precept that water or water services have a fixed and universal meaning. This precept has come to be rejected.
[8] Johan Normark, "Water as a Hyperfact," *Current Swedish Archaeology* 22 (2014): 183–206.

culture.[9] Indeed, there is a broad consensus that water makes human culture what it is, and the constructs of water that came to be in the ninetieth and early twentieth centuries are foundational to Euro-western culture in the modern and post-modern periods are flawed. Further, water studies have demonstrated that water is not just materially or symbolically powerful, it has social agency. In looking at water-human relations, several scholars have reconstructed water as a social agent.[10] They contend that water is not a passive background for human existence, nor merely a generative or life-sustaining substance. In addition, water is an entity that is mutually constituted by the social agents and other phenomena with which it is situated, and by its spatiotemporal location. Said another way, all entities are constituted by their relations to other contemporaneous entities, and also to previous entities. Previously, the interactions between water and culture were understood as being in a dialectal process in which each is external to the other.[11] However, now water scholars agree that water causes and is internally related to culture. At the end, it is clear that what scholars are saying is that water is highly relational and adaptive, which in turn accounts for why is has multiple ontologies.

HOW IS WATER RELATED TO HUMAN CULTURE?—APPROACHES TO WATER-HUMAN RELATIONS

In addition to theorizing what water is, water studies also offers a detailed analysis of how water and human culture are related and what is produced from the numerous engagements between

[9] Karl A. Wittfogel, *Oriental Despotism: A Comparative Study of Total Power* (New Haven: Yale University Press, 1957); and Terje Tvedt, *Water and Society: Changing Perceptions of Societal and Historical Development* (London: Bloomsbury Publishing, 2015). See also Emily Holt, ed. *Water and Power in Past Societies* (Albany: State University of New York Press, 2018).
[10] Karine Gagné and Mattias Borg Rasmussen, "Introduction–An Amphibious Anthropology: The Production of Place at the Confluence of Land and Water," *Anthropologica* 58, no. 2 (2016): 135–149), 137.
[11] Joachim Blatter and Helen Ingram, eds., *Reflections on Water: New Approaches to Transboundary Conflicts and Cooperation* (Cambridge, MIT Press, 2001), 35.

them.[12] While there is a great deal of consensus that water is socially constructed and has multiple ontologies, there is a wide range in the propositions of scholars with regard to how water and culture are related. Here, I limit myself to a discussion of two approaches that I think are most relevant and useful for water-focused ecotheology: the material-relational approach, which is largely located in geography, science and technology studies, and political ecology, and the meanings approach, largely located in history, anthropology, sociology, and archeology. Both scholarly approaches are helpful because they offer alternative frameworks and constructs for understanding and representing water-human relations.

The material-relational approach accounts for water-human relations through theorizing water as having a "socio-natural" ontology, which is a dialectical relationship between and among the physical properties and social meanings of water and culture.[13] This work represents a shift from water constructed as influential but external or independent of human culture to reconstructing water and culture as mutually constitutive of one another. Thus, water makes and is made by culture but not as objects external to each other. Further, the relation between water and culture is reconstructed as mutually constitute and internally related, such that water and culture make and remake one another.[14] According to geographer Christopher Bear, "Socio-

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[12] Examples include Astrida G. Neimanis, Cecilia Chen, and Janine MacLeod, *Thinking with Water* (Montreal: McGill-Queen's University Press, 2013); Kirsten Hastrup and Frida Hastrup, eds. *Waterworlds: Anthropology in Fluid Environments,* Ethnography, Theory, Experiment, Volume 3 (New York: Berghahn Books, 2015) doi.org/10.1111/1469-8676.12429; Stefan Helmreich, "Nature/Culture/Seawater," *American Anthropologist* 113, no. 1 (February 2011): 132–144. doi.org/10.1111/j.1548-1433.2010.01311.x.; and Jamie Linton, *What is Water?*

[13] Within the material-relational approach there are a variety of terms used, such as *hydro-social*, a *total social fact*, and *relational-dialectical*. I have chosen to use *socio-natural.*

[14] See Karen Bakker, "Water: Political, Biopolitical, Material," *Social Studies of Science* 42, no. 4 (2012): 616–617; Jessica Budds, "Contested H_2O: Science, Policy and Politics in Water Resources Management in Chile," *Geoforum* 40, no. 3 (2009): 418–430; Matthew Gandy, *The Fabric of Space: Water, Modernity, and the Urban Imagination* (Cambridge, MA: MIT Press, 2014; Maria Kaika, "The Political Ecology of Water Scarcity: The 1989–1991 Athenian Drought," in *In the Nature of Cities* (London, UK: Routledge, 2006), 172–187; Jamie Linton, *What is Water?;* Jamie Linton and Jessica Budds, "The Hydrosocial Cycle: Defining and Mobilizing a Relational-dialectical Approach to Water," *Geoforum* 57 (2014): 170–180; and Alex Loftus, "Rethinking Political Ecologies of Water," *Third World Quarterly* 30, no. 5 (2009): 953–968, doi.org/10.1080/01436590902959198.

nature is a concept that is used to argue that culture and nature are inseparable and should not be analyzed in abstraction from each other. It emphasizes temporality and processes of becoming, while its engagement with poststructural thought leads to a focus on ontological hybridity. At the heart of research on socio-natures is an interest in processes of their production, and especially on the labor that is involved and the uneven power relationships that emerge."[15] Thus, they explain that water is a cultural, economic, political, and religious entity. The dialectical-relational approach reconstructs both water and culture. Rather than each understood as preconfigured entities, they are understood as mutually constitutive and co-evolving.

The meanings approach is more interested in the conceptual aspects of how water and culture are related. For these scholars, water is encoded with meanings through social processes, and those meanings may be transferred to other artifacts, which can in turn become powerful social factors as they convey undercurrents of meaning. Water is understood to be a conceptual entity as well as a material one, and conceptual waters are understood to have agency. Scholars theorize that meanings given to water emerge from phenomenological and discursive engagement with water bodies and water systems. For example, water is linked with purity and sanitation due to its bio-chemical ability to dissolve and cleanse. In addition, meanings are encoded into waters. For example, water systems such as great dams have been encoded with meanings of modernity, national might, and engineering prowess. Water scholars have shown that water constructs may be used ideationally to form personal and social identities, which in turn create undercurrents of meanings that have potent influence on social interactions and practices. Further, actual manifestations of water are also inflected with the meanings that human

[15] Christopher Bear, "Socio-Nature," *International Encyclopedia of Geography: People, the Earth, Environment and Technology* (2016): 1–5.

thought ascribes to it, which further shapes how human communities engage with actual manifestations of water. An example of such undercurrents of meaning are the holiness ascribed to the waters of the Ganges river, which make them ontologically different than those of the Thames or Hudson. The meanings approach reconstructs water as material and conceptual, and more importantly that water is a connective, reflective, fluid substance that is recursively related to culture. Hence, water scholars from both the material-relational and meanings approaches have reconstructed water as known first in terms of what it exists with. Another way of say this might be that we cannot understand water completely unless we understand water in terms of its relations to other things, such as human culture or how we use it. Moreover, water is internally related to other entities, such that it becomes an entanglement of water and culture, a hybrid object, or an assemblage of water and meaning.[16]

What is made visible and legible by the work of water scholars on water-human relations? To begin, their work makes explicit how intricate, layered, and often impenetrable water-human relations are. Indeed, anthropologist David Mosse appropriately states, "[t]he relationship between water and society is as complex a historical, sociological, and regional problem as any that can be imagined."[17] The work of water scholars contributes to water-focused ecotheology in two significant ways. First, by recognizing that water is not exogenous to human communities. Indeed, the opposite is the case: water permeates human life utterly and makes possible community life. Additionally, they offer reconstructions of water and culture that, instead of understanding them as separate, distinct entities, identify water and culture as

[16] Kirsten Hastrup, "Water and the Configuration of Social Worlds: An Anthropological Perspective," *Journal of Water Resource and Protection* 5, no. 4 (2013): 61. doi:10.4236/jwarp.2013.54a009.
[17] David Mosse, *The Rule of Water: Statecraft, Ecology and Collective Action in South India* (Delhi: Oxford University Press, 2003), 1.

entangled and mutually constituted. As such, their reconstructions have important ramifications to discourses on water pollution and, even more so, water shortages that are due to socially sanctioned, habitual overconsumption.

Second, water scholars offer a critical reassessment of epistemologies of water, as well as water and water-human relations. Water scholarship reveals what is missing in our conventional understanding of water, water-human relations, and water crises. Chapter one and two presented a critical analysis of how water "scarcity" and "what water is" are socially constructed. This analysis revealed the inadequacy of the conventional ideas of water, and the inability of those constructs to deliver on their promise of sufficient, reliable, and equitable freshwater around the globe, in the present or in the future. Grasping that water has deep political, economic, and spiritual ontologies (among others) helps to have a hermeneutic of suspicion in discourses about privatization or about the economic development of water bodies and flows. The body of water literature offers a reassessment of many details, such as what water is and what it becomes in relation to culture, as opposed to conventional ideas of water as a separate and independent substance, and thus how water, in its many social forms, shapes geographies and societies. Even more complex are the undercurrents of meaning that have been the focus of the meaning approach. Strang and Krause have examined how generated and encoded meaning are highly durable.[18] Most important are the meanings that are entangled with identity, belonging, place, and social status.[19] Strang examined the meanings that have been encoded in waterscapes as well as transferred to "watered" objects, such as lawns and agricultural products, or to the hidden

[18] See Veronica Strang, *Gardening the World: Agency, Identity and the Ownership of Water* (Oxford: Berghahn Books, 2009), and Veronica Strang and Franz Krause, "Thinking Relationships Through Water," *Society & Natural Resources* 29, no. 6 (2016): 633–638.
[19] Hastrup and Hastrup, eds., *Waterworlds*, 9–14.

waters that are subsumed into production processes, such as electrical power generation. These undercurrents are powerful drivers of practices, yet poorly recognized. They make visible the still decidedly dualistic and anthropocentric construction that still dominates Euro-western culture, and simultaneously evokes an alternative that is relational and respectful. The literature of water studies is an important resource for REMOs and ecotheologians focusing on water to better understand these different aspects of water and water-human relations. Fluency in the social construction of water and its ontologies of water, as well as water-nature relations, enables water advocates to call out misrepresentations and reifications of water, to name alternative possibilities, and to reconstruct alternative concepts, constructs, and narratives.

Theorizing Water from the Perspective of Ecotheology

Having reviewed that water is understood and represented in circumscribed ways in Euro-western culture, and that reconstruction of water necessitates an analysis of the dominant constructions of water, nature, and human nature, I will now move on to my own reflections on water from the perspective of ecotheology. However, before doing so, let me be explicit about my premises and methods as I share some but not all of these premises with water experts and scholars. I approach water from the perspective of process thought, and therefore understand water to be not a substance but an entity in process. What this means is that water is an entity that comes into being in mutual, inter-dependent relationship with other entities (abiotic and biotic), and is intrinsically active. Water does not exist but rather becomes, endlessly. This is not a common approach among water studies, although it is appreciated by David Harvey and Jamie Linton.[20] I also presume that it is not useful to many to think of water through the dichotomy of nature/culture.

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[20] David Harvey, *Justice, Nature and the Geography of Difference* (Oxford, Blackwell: 1996), 47; Jamie Linton, *What is Water?,* 27.

As I wrote in chapter five, nature exists on a spectrum, as does water. Thus, theorizations such as Terje Tvedt's that define water in terms of modification (either one or the other) are premised on defining nature in dualistic, anthropocentric terms rather that nature as mutually becoming and relational. I also presume that water, water-nature relations, and water crises, are socially constructed. In addition, methodologically, I reconstruct water in part through my prior reconstruction of nature, found in chapter five. Like nature, water has been constructed in the modern and post-modern periods using a binary of natural/modified. Waters that flow or are held in built structures, such as foundations or pools, are understood as modified rather than natural. For some water professionals, the distinction of modified water may be useful, but I think for ecotheology and REMOs, it is outdated, dualistic and distorts understanding water as more than material or natural. Further, water is an ongoing and interrelated process, it is more accurate and useful to conceptualize water, as I did nature, as moving along a spectrum of modification. Anthropologist Stefan Helmreich agrees when he writes, "Water oscillates between natural and cultural substance, its putative materiality masking the fact that its fluidity is a rhetorical effect of how we think about 'nature' and 'culture' in the first place."[21]

Reimagining Water through Reconstructions and Counternarratives

As I have argued in previous chapters, water-focused ecotheology is not a matter of discovering a value for water, nor is it a matter of reclaiming forgotten values. Such arguments are premised on values driving social change. As I discussed in chapter one and three, there is a body of research in the social sciences that challenges such a premise. Whereas authors such as David Groenfeldt, Peter Brown, Jeremy Schmidt, and Christiana Peppard have called for a return to valuing water or to establishing a water ethic, I argue that we will transform how we engage with

[21] Helmreich, "Nature/Culture/Seawater," 132–144.

water through reimagining what water and water-human relations are.[22] I have stated that water is reimagined through a threefold, interdependent process of awareness, literacy, and reconstruction. Reconstruction may be formal, taking the form of an explicit proposition of what water is and its attributes, or in the case of water relations, an explicit proposition of how water is related to abiotic and biotic entities. Reconstructions may also take the informal form of counternarrative, which reconstruct how we understand water through revitalized symbols, stories, and rituals. Ecotheologian Heather Eaton suggests that narratives have great potential in ecological cultural transformation because narratives are "the 'information and navigation' structures of the mind."[23] Eaton is pointing to how tacit knowledge is so unconscious and reflexive that it mediates how we think about the world and humanity, and is indicative of the capacity of counternarratives to disrupt and overturn how we conceive of water and water-human relations. Philosopher Mark Johnson agrees when he writes: "Narrative is not just an explanatory device, but is actually constitutive of the way we experience things."[24] Counternarratives challenge the conventional narratives by highlighting how what has been taken-for-granted knowledge cannot account fully for reality or solve the problems that they purport to address. Further, counternarratives function to show how human communities may have different relationships with waterscapes through the act of evoking a previously unimagined reality. Speaking to the need for an energizing reconstruction, Anna Peterson states environmental ethics should include a "counterbalancing source of imagination, the utopian hope that reaches toward

[22] David Groenfeldt, *Water Ethics: A Values Approach to Solving the Water Crisis* (New York: Routledge, 2013); Peter G. Brown and Jeremy Schmidt, eds., *Water Ethics: Foundational Readings for Students and Professionals* (Washington, DC: Island Press, 2010); Christiana Peppard, *Just Water* (Maryknoll, NY: Orbis Books, 2014).
[23] Eaton, "The Challenges of Worldview Transformation," 128.
[24] Mark Johnson, *Moral Imagination* (Chicago: University of Chicago Press, 1993), 11.

the not yet. To transcend and transform experience…we need to envision alternatives to the very lives we are living."[25]

I contend that both reconstructions and counternarratives may function as hope does in Brueggemann's model of prophetic imagination. Brueggemann explains that hope is disruptive because it rejects the claims of conventional knowledge as the only truth, and it is disarming because it does not base its alternative vision of the future on feasibility or optimism.[26, 27] For water-focused ecotheology, reconstructing water constructs and imagining counternarratives is a turning away from conventional constructions of water as dead, dumb, and disenchanted and turning towards water that is that is in process and is relational, that has multiple ontologies, and that makes and is made by culture. Below I offer three water counternarratives that reimagine water, drawing attention to how water intersects, permeates, configures, and enlivens the whole of the created order.

The World's Myriad Waters: Three Counternarratives

I propose three counternarratives that may act as starting points for challenging conventional constructs and reimagining larger water narratives. Each counternarrative is grounded in water literacy and foundational premises, that water is socially constructed, water is in process, and water is relational. The counternarratives are: water as nexus, water as "part of holiness," and water as "unfinishable." They may be useful to challenge or even overthrow conventional water concepts and constructs by contesting the reliability and moral imagination of the latter. Further,

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[25] Anna L. Peterson, *Being Human: Ethics, Environment, and Our Place in the World* (Berkeley, CA: University of California Press, 200), 239.
[26] Brueggemann, *Prophetic Imagination*, 65.
[27] It must be noted that, in the prophetic tradition, *hope* is not the same as optimism. The two verbs most often translated as hope are *yakhal* and *qavah*. *Yakhal* signifies "waiting for," whereas *qavah* signifies "waiting in expectation." However, in the texts, those who are waiting or expecting, are rooted in their faith in YHWH's steadfastness rather than in knowledge of circumstances. In contrast, optimism is based on favorable circumstances, or in choosing to remain optimistic despite unfavorable circumstances.

counternarratives are able to evoke an alternate future that was previously unimaginable. In addition, each counternarrative connects with my previous reconstructions of nature and human nature in previous chapters. As I take Brueggemann's model of prophetic imagination as a model, I also address how my counternarratives fulfill a criteria of being reliable, acceptable, and evocative. In *The Practice of Prophetic Imagination*, Brueggemann suggests that a community that undertakes a prophetic practice might continually ask itself whether the narrative's account of reality is reliable, morally acceptable, and if the narrative can make the community happy or safe.[28] I adopt the first two questions as an excellent criteria for an ecotheological counternarrative, and add a third criterion of whether the counternarrative evokes an alternative construction of water that is energizing.

WATER AS A NEXUS

This section will describe my counternarratives of water as "a nexus." In addition to describing the counternarratives, I also show how the social construction is consistent with water awareness and literacy, and that it is "imaginative." Water as nexus also resonates with reconstructions of nature and human nature. As water is the basis for all life on earth, water experts and scholars have often reconstructed water as a matrix.[29] The word *matrix* comes to English from Latin by way of Old French, and originally had the sense of womb, but later came to also signify source or origin, and in the sixteenth century and forward came to also be used by the natural sciences, mathematics, and philosophy. A reconstruction of water as a superlative womb is based on the fact that water is the source of life on earth, that mammals are born from amniotic waters, and

[28] Walter Brueggemann, *The Practice of Prophetic Imagination: Preaching an Emancipating Word* (Minneapolis: Fortress Press, 2012), 14–16.
[29] Two examples are Philip Ball, *Life's Matrix: A Biography of Water* (New York: Farrar, Straus, and Giroux, 2000) and Felix Franks, *Water: A Matrix of Life*, 2nd ed. (Cambridge, UK: Royal Society of Chemistry, 2000). Franks was a distinguished scholar of water's physical and chemical properties.

that rainwater and irrigation are necessary for drinking water and for growing any foodstuffs. However, in doing so, water is often cast as passive, fixed, and without agency, and thus a problematic dualism is introduced. Despite being conceptualized as the generative source of life, water itself is not considered to be alive. Further, the construct of water as matrix obscures that water is a source of novelty and connectivity in nature and in culture. Water, as it is in process and constantly on the move, is deeply relational. In light of the work of water scholars who describe water in terms of connection, inter-relatedness, and dialectical processes of mutual becoming, I contend that water is better understood and represented by the word *nexus*.[30]

The noun *nexus* denotes a connection between agents or places, and can be either a material or social linkage.[31] As I discussed at the beginning of this chapter, water connects through its material properties and because it is socio-natural. Water is also a nexus of all living beings, as Martha Franks explains. Franks, an attorney who specializes in water rights, states that, "Water is so fundamental and flows so ubiquitously that it connects not just every human who uses the water of a river, or who pumps the groundwater connected to a river, or who lives in a human community whose welfare depends on water decisions, but also the whole of creation."[32] Materially, water is a nexus of transporting and circulating materials, and it so often is the medium of social interaction and relations.[33] Indeed, prior to the age of railroads and later interstate highways, water was the primary means of traveling long distances and the medium of

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[30] Veronica Strang, *The Meaning of Water* (Oxford: Berg, 2006), 129; Strang, *Water: Nature and Culture*, Earth Series (London: Reaktion Books, 2015), 14, 54; and Jamie Linton, *What is Water?: The History of a Modern Abstraction* (Vancouver: UBC Press, 2010), 5.
[31] Also originally from Latin, *nexus* came into English relatively recently (mid-seventeenth century), and derives from *nectere* "to bind." It is related to several words that also connote a sense of physical or conceptual connection, such as *annex*, *denouement*, *net,* and *network.*
[32] Martha C. Franks, "Water, Theology, and the New Mexico Water Code," 48 *Natural Resources Journal* 27 (2008), 239.
[33] Benjamin Orlove and Steven C. Caton, "Water Sustainability: Anthropological Approaches and Prospects," *Annual Review of Anthropology* 39 (2010), 401.

transporting heavy goods to markets. In the twenty-first century, water circulates and transports different materials. Further, commodities are shipped across oceans, and therefore water connects communities economically and nutritionally. On a smaller scale, water is the nexus of all built environments, such as cities and towns. Welsh geographer Eric Swyngedouw writes: "Water is indispensable 'stuff' for maintaining the metabolism, not only of our human bodies, but also of the wider social fabric. The very sustainability of cities and the practices of everyday life that constitute 'the urban' are predicated upon and conditioned by the supply, circulation, and elimination of water."[34, 35] Additionally, a nexus is a more fitting counternarrative for conceptualizing water as it represents a dynamic not static connection. Due to its ionic nature, water both dissolves and dissociates materials that it encounters. When water encounters other materials, it often bonds with the substance and carries it along within its flow. Later, water will evaporate, which effectively deposits the transported substance to a new location, or water will encounter additional substances that chemically interact with the first substance, which creates new substances. Both of these processes are dynamic, and continually generate new combinations of materials. Water as a nexus connects, modifies, and reconnects materials, natural water systems, built environments, and social linkages.

Does water as a nexus satisfy the criteria reliable and evocative? Indeed, it does. First, the social construction accounts for more than one understanding of water and therefore avoids essentializing or reifying water. Water as a nexus jibes well with the principles of reimagining water. Also, a nexus is not static but grows or shrinks as connections come into being or perish, which is consistent with water as a material and social process. Water and waterscapes are a

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[34] Erik Swyngedouw, *Social Power and the Urbanization of Power* (Oxford: Oxford University Press, 2004), 1.
[35] Note, many countries, both rich and poor, are dependent on other regions for a majority of their food supply. See http://data.worldbank.org/indicator/TM.VAL.FOOD.ZS.UN.

nexus because they connect to each other, and water and water-systems are a nexus because they connect culture and nature recursively. Additionally, water as a nexus supports both water's socio-natural character as a nexus and can be a connection or aggregate of connections between materials or communities. Lastly, water as a nexus supports the manifold meanings of water, from water as circulator and solvent, to the living waters of the New Testament. Water as a nexus is morally acceptable because it forces us to confront the interconnectedness of water and culture, and the interconnectedness between communities that use the same water. In addition, water as a nexus can respond to the challenges of local and global scarcity in a more thoroughgoing manner than conventional constructs, which makes it more morally acceptable. The older promise of scientific and hydrological management, or even water as matrix, has not been adequate to address the water crises. Water as a nexus is not only a coherent representation of water as a material, social, and conceptual process, the construct is also able to speak to our contemporary moment. Further, water as nexus has a utilitarian value of water but in a highly relational manner. Water is valuable because it is more than a foundation for life and culture. Water as nexus is valuable because it connects people as little else might do. Water as nexus is about water as central/valuable to the community because it connects.

Is the social construction of water as a nexus "imaginatively evocative enough?" While water as nexus may not seem revolutionary, I suggest that it confronts conventional narratives by cutting to the quick and allowing for water to have agency, or at least for water's creative role to be more than womb. Water as nexus imagines interconnections beyond neighborhoods and cities, with more than just humanity. Water is not homogenized, or silenced. In addition, the construct of water as nexus is consistent with constructs that I developed in previous chapters on humanity and nature. Two realities that are brought into sharp relief by the social construction of water as

nexus: the fluid nature of water means that it connects like few other things in the natural world, and water's fluidity demands that we acknowledge and attend to how interconnected we are by waterscapes and socio-natural water systems. Franks states, "The nature of water forces us to face the physical fact, no matter how grudgingly, that we are inescapably connected to each other."[36] Water as nexus is marked by relationality and justice, through interconnectedness of water as well as water and culture. Having discussed water as a nexus, let us now consider another construction, water as "unfinishable," which gives emphasis to water's transmutable and irreducible character.

WATER AS UNFINISHABLE

This section will describe my counternarrative of water as "unfinishable." As we saw in chapter one, the most consistent characteristic of water is its fluidity. Looking at water, it may seem placid or unchanging, yet it is not. Water is both materially and conceptually always in process. Physicist Sidney Perkowitz explains succinctly by stating, "… notwithstanding the metaphorical truth of the adage, 'still waters run deep,' in fact there is no still water. …Far below the limits of human perception, inconceivable numbers of molecules in my quiet pond perform an endless thermal dance."[37] Physicist Philip Ball likewise describes the fluidity of material water when he writes, "Every day, every passing second, water is on the move. The rivers flow, the oceans perform their slow and elegant gyrations, the clouds congeal and weep. Each 3100 years, a volume of water equivalent to all the oceans passes through the atmosphere, carried there by evaporation and removed by precipitation."[38] Indeed, if we consider clouds, fog, and snow, we see that mutability and fluidity are fundamental qualities of water. Veronica Strang explains this

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[36] Franks, "Water, Theology, and the New Mexico Water Code," 236.
[37] Sidney Perkowitz, "The Rarest Element," in David Rothenberg and Marta Ulvaeus, *Writing on Water* (Cambridge, MA: The MIT Press, 2001), 5–6.
[38] Ball, *Life's Matrix*, 25.

concisely: "…weather is water in motion, water transitions between forms, water rising and falling, freezing and flowing."[39] Most often, we imagine water as static or constant, yet it is anything but. Perhaps this is because when we experience water from the tap, it looks the same today as it did yesterday. Or when we stand on the shores of a lake or river, the waters seem to us to be the waters that are always present, abiding and dependable. However, this seeming constancy is a trick of our perception (or our inability to perceive). Socially, water endlessly refreshes and modifies cultures as it moves through agricultural, industrial/commercial, political, energy (power generation) and religious domains. In her poem "What Can I Say," which I quoted at the beginning of this chapter, Mary Oliver writes, "Inside the river, there is an unfinishable story… and it will never end until all ends."[40] Likewise, there is an unfinishable story within all water systems, both anthropogenic and natural.

I suggest that Oliver's word "unfinishable" provides an excellent counternarrative of water.[41] This is water as an inexhaustible flowing, yet it deemphasizes the idea of the water cycle. As noted previously, the social construction of the water cycle has given the false impression that water moves from evaporation-precipitation-percolation-runoff in predictable and consistent ways. Water as unfinishable better represents that materially water is always in motion. This construct understands water as myriad material entities in process rather than a homogenous, material substance. Further, the construct of water as unfinishable may be applied to socio-natural and conceptual water. Hybrid waters, such as water supply and sewer systems, are also in process and they enable and limit both waterscapes and culture in endlessly recursive

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[39] Strang, *Water: Nature and Culture*, 47.
[40] Oliver, *Swan*, 1.
[41] Oliver's word *unfinishable* resonates with that of cultural anthropologist Clifford Geertz, who described human nature as *unfinished*. See Geertz, "The Growth of Culture and the Evolution of Mind," in *The Interpretation of Cultures* (NY: Basic Books, 1973), 83.

interactions. Similarly, ideas of water are constructs that are always historically and culturally situated. Oliver writes in her poem, "it will never end until all ends," which is true of ideas of water as much as it is true of material and socio-natural water. This is because water is too vast and mysterious for human beings to entirely know.

The construct of water as unfinishable is especially apt for water that is conceptual, such as holy water. As all social constructs are historically contingent and situated, naming water as unfinishable acknowledges this fact and employs this understanding to embed a continual mindfulness to the mutability of all constructs. Further, at any given time within a culture, there are many structures and social constructions, narratives and worldviews at play. In all social constructions, constructs compete for dominance. Alongside established and even worn-out constructs, reconstructions and counternarratives develop and must contend for attention and acceptance.[42] Hence, counternarratives of water exist within a consortium of conventional constructs, and are subject to themselves becoming reified. Moreover, water as unfinishable overthrows the reification of water as a material substance and its consequent disenchantment. We imagine water in terms of how we most often encounter water—at the tap and through the narrative of the physical sciences. We experience water as a homogeneous substance that flows from pipes as a transparent, fluid, odorless, and typically tasteless substance. We also imagine that because we know that water is a simple compound of two hydrogen molecules and one oxygen, we *know* water. Yet, we know so little. What we know is most often tap water, and when we know wild, unmodified water systems, it is typically the shallow waters of lakes, rivers, and tidelands. But we do not know the pelagic waters of the open ocean, nor the deeper layers of the ocean's water column, nor do many appreciate how anomalous water is as a material

[42] Swidler, "Culture in Action," 280.

substance. Physics cannot account for many of water's behaviors, such as turbulence and quantum fluids.[43] In his essay "The Rarest Element," physicist Sidney Perkowitz explains that despite thousands of years of scientific advancement, our understanding of water "fails just as the questions get truly interesting.... [M]any of the most basic and familiar properties of water remain tantalizingly, and frustratingly, unexplained."[44] Water is "indeterminate," ultimately unknowable, as nature is similarly ultimately unknowable. The construct of unfinishable returns us to a narrative structure that knows water as mysterious and beyond the ability to be completely known or controlled by humanity.

Water as unfinishable is a consistent with reimagining water, which finds that water has multiple ontologies, is socially constructed, and is in process. Water as unfinishable resonates very well with the premise that water is socially constructed. Not only does the word *water* have multiple senses but is has senses that we have yet to know. As I discussed in chapter two, water's socially constructed meanings changed rapidly over the course of just 150–200 years. Most notably, the counternarrative of water as unfinishable overthrows many problematic dualities. As water scholar Terje Tvedt noted, "The holy water for rituals such as baptism, ablution or purification belongs to a different world of meaning from the water involved in a river's annual inundation for irrigation, or the water that nomads draw from wells in the oases, or the snow used to build igloos, or the water stored in dams for hydro-electric power generation. But from nature's point of view it is the same water."[45] Tvedt's point is that, to nature, all water is the same regardless of whether it is snowpack in a glacier or fog in San Francisco. Likewise, water that has been used by a dishwasher is no longer potable for humans but to nature it remains

[43] Perkowitz, "The Rarest Element," 10.
[44] Perkowitz, "The Rarest Element," 5.
[45] Terje Tvedt, *Water and Society*, 13.

water, albeit water with suspended detergents and food particles. To understand water as unfinishable is to embrace the paradox that water is situated and universal simultaneously.

Water as unfinishable satisfies the criteria of reliable and evocative. First, understanding and representing water as unfinishable is reliable because it more fully accounts for water's fluid, relational, and creative nature. Water as a material process is always on the move, yet never destroyed. Further, water and water systems are unfinishable because they are always on the move and never perish, and it honors the fluidity of water. Water as a social process is marked by its fluidity and how it creates and sustains social relations, and because they create a continuous loop of modification. Water as a conceptual process is also fluid, relational, and generates novelty. Water as unfinishable challenges the idea of water that arose in the nineteenth century that water is measurable, tamable, and knowable. Rather, as an unfinishable conceptual process, water is mysterious and enchanted. In addition, it overthrows the idea of static water, or water that is "consumed." Water as unfinishable can be a paradigmatic shift from understanding water as static, own-able, and manageable, to shared, in flux, and unknowable.

To see water as unfinishable is to embrace the interconnectedness of all water systems, and the dependency of all living beings on water. Water as unfinishable is marked with respect for water exogenous of culture and as a foundation of culture. It understands water as having intrinsic value beyond human concern, as well as being absolutely valuable to culture. To see water as unfinishable is to re-enchant water conceptually. Water as unfinishable can be a paradigmatic shift from understanding water as static, own-able, and manageable, to shared, in flux, and unknowable. Water can be more than *res publici*, it might be thought of as

res communes, "a thing which, by its very nature, could not be the subject of ownership."[46] In *res communes*, there can only be usufructuary rights, not ownership rights. Further, water as unfinishable is imaginative enough because it conceptualizes water as ultimately ineffable and *sui generis*, and calls us to move beyond our utilitarian value of water and appreciate its relational and enigmatic values. Having discussed water as unfinishable, let us now consider a final alternative construct, water as "part of holiness," which gives emphasis to water's significance as a spiritual entity and how water may manifest as an entirely conceptual entity.

WATER AS PART OF HOLINESS

This section will describe my counternarratives of water as "part of holiness." After describing my counternarrative, I show how it is consistent with reimaging water, and it is adequately "imaginative." Water as part of holiness also resonates with constructs of nature and human nature. As previously discussed, water is a very important religious symbol. In many origin stories, reality is formed from primordial waters. In the Judeo-Christian tradition, water is formed into "all that there is" by the breath of God, whereas in the Babylonian creation story, it is the mingling of the sweet and salt waters. Fresh water and saltwater are divided. Fresh water is precious, and is important also for purification. In some religious traditions, such as Hinduism, water itself is sacred, most especially in rivers.[47] In others, such as Taoism, water is a preeminent model for right thinking and Being. In Buddhism, water is an important symbol of clarity, purity, and calm, and is used in many rituals.[48] Perhaps because many of the regions where Christianity has thrived have been well-watered, such as western and central Europe, and the Americas (at

[46] Anthony Scott and Georgina Coustalin, "The Evolution of Water Rights," *Natural Resources Journal* 35 (1995): 836.
[47] A.J.M. (Lida) Schelwald–van der Kley, Linda Reijerkerk, *Water: A Way of Life: Sustainable Water Management in a Cultural Context* (Leiden: CRC Press, 2009), 47.
[48] Schelwald-van der Kley and Reijerkerk, *Water: A Way of Life,* 49.

least East of the 100th parallel); but we have lost a sense of how water is a part of creation, a *sine qua non*. Our models of God might include that God is connected and compassionate, and therefore wants water justice and water-focused ecotheology. How can these be retrieved, revived, or reconstructed?

There are two issues to address in how to reconstruct water theologically, that is how water relates to the Divine and the other entities within the creation. First, there is the act of reclaiming water as a part of holiness, yet making clear that water is not to be conflated with the divine. In many parts of the world, that water is sacred or holy is agreed upon unconditionally[49]. In Christianity, water is a symbol of God's grace and also of the gift of the gospel's good news and of salvation. In Islam and Judaism, water is a purifier and a symbol of God's creative energy, blessing, bounty, and justice. Additionally, water is also a part of liturgy and praxis in Christianity, Islam, and Judaism.[50] In Hinduism, water is sacred and is absolutely central to praxis. However, in the modern Euro-western world, water is rarely understood or represented as connected to the Divine. Despite so many religions identifying water as sacred or holy, water is not understood to be sacred or holy unless it has been sanctified or unless it is located in a remote and unmodified space, which is parallel to the social construction of nature that I discussed in chapter five. As I stated in that chapter, a precursor to reconstructing water is to reconstruct

[49] It should be noted that there is an inherent ambiguity in the use of the terms *sacred* and *holy*. First, there is a subtle difference between what they denote that is often overlooked. In English, *sacred* indicates a person, place, or thing that has been consecrated or sanctified and is therefore worthy of reverence whereas *holy* is reserved for a transcendent God, or for that which God has set apart as holy. Unfortunately, *sacred* and *holy* have come to be used interchangeably. Indeed, many dictionaries circularly define *sacred* as signifying a person, place, or thing that is holy and *holy* as signifying a person, place, or thing that is sacred. Second, other languages, such as German and Russian, do not have such a distinction between things set apart by humans versus things set apart by God, nor is there such a distinction in the Hebrew Bible. See Matthew T. Evans, "Differentiating, Clarifying and Extending Concepts," *Review of Religious Research*, 45, no. 1 (September 2003): 32–47.

[50] Terje Oestigaard, "Holy Water – the Universal and the Particular," *Archaeological Dialogues* 21, no. 2 (2014): 163–64.

nature, and thus a reconstruction of nature as a unified whole within which God dwells with all living beings, and in dwelling and participating with the ecosphere, makes it holy. Therefore, I propose a reconstruction of water as part of holiness.

The genesis of this counternarrative comes a different poem by Mary Oliver, "At the River Clarion."[51] I previously quoted this poem in my introductory chapter. To recall, the poem's narrator is sitting on a stone in the river and "all afternoon I listened to the voices." After quietly waiting, the narrator hears the river say, "I am part of holiness." The counternarrative of water as part of holiness provides a starting place for individuals and communities of faith that seek a counternarrative of water. While secular individuals and communities may not have a need to understand water as sacred or participating in the Divine, communities of faith often have a deep longing for language that can express why water is more than instrumentally or intrinsically valuable. For many theists, water has spiritual value and care of water is a spiritual obligation.

Water as a part of holiness confronts the conventional narrative that water is a knowable, quantifiable, natural substance. Rather than being dead, dumb, and disenchanted, water participates in the unfolding act of creation that was begun, "when the Spirit of God moved upon the face of the waters." This construct of water understands and represents water as part of holiness independent of humanity. In addition, water is part of holiness as it is purifier, healer, and indicates an active, mutual relationship with the Divine.[52] Additionally, it moves away from identifying water as sacred. Holiness refers to Divinity or the Divinity's attributes, whereas sacredness indicates consecrated items, that is respected or venerated objects.[53] Participation

[51] Mary Oliver, "At the River Clarion," *Devotions: The Selected Poems of Mary Oliver* (New York: Penguin Press, 2017), 86, lines 1–9.
[52] For example, Psalms 36:9; Jeremiah 2:13; Isaiah 55:1; and Amos 5:24.
[53] Oestigaard, "Holy Water – Universal and the Particular," 163.

with holiness connotes dignity and agency. Water as part of holiness is a consistent with the water scholarship, which finds water to be a socio-natural entity that mutually constitutes reality with other entities. Likewise, it is consistent with the premises of reimagining water that I have suggested, which is that water is socially constructed, simultaneously natural and cultural, and in process.

For those who have a theistic perspective, this is historically reliable because material, socio-natural, or conceptual water can each be understood and represented as being a part of holiness. In addition, being a part of holiness is not contingent on being a substance or a process. In addition, water as a part of holiness is morally acceptable. It rejects a utilitarian ethic, and could instead embrace a deontological or virtue ethic. For water-focused ecotheological communities and individuals, this construct can present unimagined possibilities and make them real, so that they can be lived into. For water-focused ecotheological communities and individuals, it can be a resistance to the dominant narrative, and also can become a covenant of sorts. Having described these three counternarratives, let us now turn to a discussion of how the larger community of water-focused REMOs and congregations might imagine counternarratives.

Imagining Alternative Water Constructs and Counternarratives

This section will describe how constructs and counternarratives fit within the larger structure of constructs. It is also a place to re-affirm that, while constructs and narratives influence culture, they function within a larger arena. They have more influence than ends, but are not at all certain. What they can offer is an embodiment of lament and imagination, a simultaneous dissent against what is and a naming of a future world where water is understood as more than H_2O, and is cared for and esteemed.

With these counternarratives, larger narratives might be constructed. Many already have, as we have seen with ecotheological Christian groups and water-focused communities such as

EarthMinistry, WaterSpirit, Pilgrim Place, and Bayou Blue Presbyterian (Louisiana). Just as Mary Oliver has done in her poetry, and others have in theater, prose, and film. The reconstructions and counternarratives can provide more constructive, sustainable and more just solutions to the emerging global water crises. Most of all, what the reconstructions and counternarratives can offer is a decidedly different way to address the water crisis; for my larger goal has been to initiate a critical analysis of what we think water is, and why it is important to us, and moreover, why water is important to nature and to God. I have sought to give insight where so many of us are blind, and to challenge water-focused ecotheological communities to become water literate. Lastly, I have hoped to encourage others to reconstruct their conventional constructs of water and to even attempt to reconstruct their watery social constructions. It is not enough to value water as a social good, or even as intrinsically good and *sine qua non*. Our lives are lived in complex and interconnected circles, and we make choices large and small based on our social, moral, and economic cultural repertoires or everyday practices. We are habitual and we can be selfish and akratic. Yet, when our conventional constructions of water, nature, and human nature are disrupted, and when we reconstruct concepts, constructions, and narratives, everyday practices may be transformed. As we have seen in the United States with civil rights and marriage rights for same sex couples, when social concepts and constructs changed, practices followed. Human beings are adaptable and collaborative, driven both by self-interest and altruism.

Hence, changing the conceptual models impacts the ideology and vice versa. If we begin with a premise of water as socially constructed, simultaneously natural and cultural, and in process, then the hegemonic, twentieth century constructs of water as fixed-natural-utilitarian-object may be broken down. This would then make room for counternarratives such as water as

unfinishable, as nexus, or water as part of holiness. It is a complex task to reimagine water, to make water-focused ecotheology commonsense.

Conclusion

In this chapter, I have discussed water reconstruction. I have also discussed the usefulness of counternarratives, and proposed three counternarratives of water, which may function as starting points for further reconstructions and counternarratives. As with the previous two chapters, my intention has not been to advocate for a particular replacement of older, conventional constructs but to offer alternate possibilities that may kindle original and enlivening water discourses. Thus, different communities engaged in water-focused ecotheology can select constructs or counternarratives that fit their starting point, theological appeal, proscribed response, social orientation, and worldview. I now turn to the final chapter, where I give concluding remarks and suggestions for further study.

Conclusion

The purpose of this project has been to better understand environmental water crises, water use, and water itself from the perspective of ecotheology and to develop alternative constructions and practices. To that end, I have followed two main lines of inquiry: what are the causes of environmental water problems and what responses are most appropriate for water-focused ecotheological scholars and communities? As the previous chapters have shown, these were not simple questions. I found that water crises are socially constructed as shortfalls of fixed waterstocks or increased demand due to growing population and prosperity. Yet, water scholars argue that, in the West, both water-infrastructure and water-demand emerge from larger cultural structures and systems of meaning. Hence, water practices are a proximate cause of water crises rather than the root cause. Water practices depend on "the water that we think with," and consequently the social construction of water is an important concern for ecotheology.

As I have previously stated, in order to transform water practices, it is first necessary to reconstruct the water that we think with. But it is not possible to rethink water constructions unless we first know that we socially construct it and how to decode it. Therefore, water-focused ecotheologians and religious environmental movement organizations (REMOs) must acknowledge that the construction of water as a utilitarian substance or an idealized matrix is not what water is. On the contrary, water is a relational and transmutable entity. Additionally, we must also recognize and comprehend our social constructions of water-human relations. Thus, we must acknowledge that human culture is dependent on water, and that all our engagements with water occur within a larger web of interdependent relationships. Once we better understand water and water-human relations, then it is possible to reconstruct water, which in turn allows for the transformation of water practices.

Conclusion

From my analysis of the water literature, several themes emerged. First, that the social construction of water crises is an obstacle to effectively addressing root causes. Second, the water that we think with rests on dualistic constructions of nature and culture. As a result, constructs such as "the separate and wild province, the world apart from man" or as a stockpile of raw materials do not conceptualize nature—or water—as having agency or value. Indeed, they reinforce a disconnection of water from human culture and a devaluation of all but water's aesthetic or utilitarian usefulness. Third, the water that we think with emerged from historical processes. As such, our most dominant ways of conceptualizing water reflect the epistemological, political, and economic values of the previous generations. Fourth, within the literature of water studies, there are two promising approaches to more rigorously comprehend water and water's relation to human culture. The material-relational approach understands water, materially and discursively, as an active and dynamic force that is internal rather than external to process of social formation. Water shapes and is shaped by culture, and therefore how environmental transformation of water over-consumption or pollution is instigated must take into account the socio-natural nature of water. Alternatively, the meaning approach finds that water is a material and conceptual substance. Meanings emerge from water's phenomenological properties, such as its fluidity and mutability. In addition, meanings are also encoded into water by culture. The meaning approach argues that meanings encoded into water are highly persistent and regnant, and thus transformation of water practices necessitates accounting for encoded meanings. Fifth, an examination of the proposed remedies from the water sector as well as reconstructions offered by water studies and ecotheology makes clear the need for a coherent theory of social change that reliably accounts for the processes of social change. Conventional assumptions about social change at the individual and group levels are being challenged by

newer theories, notably by toolkit theory and practice theory. Consequently, conventional strategies of the water sector that depend on moral or economic incentivization will have limited ability to affect transformation of water practices. More research is needed to determine what models more reliably account for the link between water practices and culture's influence to transform water practices.

In addition, there are several key insights that are the result of my exploration of the confluence of ecotheology, water studies, and sociology. First, the significance of distinguishing between the water that we think with, water bodies, water practices, and watered products and processes. Second, the significance of the regnant power of the water that we think with to water-focused ecotheologians and REMOs as they seek to respond productively to water crises. If ecotheologians and REMOs do not understand how water practices are shaped by the water that we think with, they will have limited ability to transform them. Thus, to transform water practices, they must rethink the water that we think with. Third, ecotheologians cannot retrieve or replace the water that we think with with older constructions or ones borrowed from non-Western cultures that counter materialism and dualism. Until ecotheologians acknowledge that the water that we think with is a construction and understand its origins in religious, economic, political, and social processes, they risk replacing one set of circumscribed constructions for another.

The conclusions that I have drawn from my work are multiple. First, I undertook this project not comprehending how frequently water transgresses boundaries and transcends conventional understandings of what it is, nor how humanity is entangled within its varied and fluctuating currents. It has been humbling. Moreover, I now realize that water will always elude any effort to know it exhaustively and thus statements that articulate "what water is" will always

fail to capture the full reality of water. What we can say about water, without being reductive or irrelevant, is that water is relational and transmutable, and that water-human relations are mutually constitutive of each other. Further, because water is known through its contexts and relations, water-focused advocates must proceed with caution within discourses on water problems, in particular problems that are framed as crises. The literature from water studies has made clear that water is not "two constituent parts of hydrogen with one constituent part of oxygen" that are found in multiple forms, scales, and states.[1] When examined carefully, we see that water is a plurality of instantiations. Therefore, I conclude that conscious water-focused advocates reframe "scarcity" as "thirst," and redefine questions such as "why are we running out of water?" to "why are we so thirsty?" Second, I conclude that for water-focused ecotheologians and REMOs to be effective, they must push past retrieval or replacement of the water that we think with. Indeed, they must also not be satisfied with awareness of the social construction of water. Authentic rethinking of the water that we think with only emerges out of comprehension and fluency. Whether or not REMOs choose to follow my model, it is vital that they scrutinize the water that they think with because water, culturally, is a multiplex and, environmentally, it is complicated by conventional Euro-western bifurcations between abiotic and biotic substances, dualisms of nature/culture, and the many historical, political, and economic processes that have reconstructed water as an asset to be owned, controlled, and maximized. Lastly, I conclude that, for theists embedded within Euro-western culture, conventional doctrines that assume a dualistic hierarchy of humanity over nature (and therefore water) are obstacles to understanding water as central to God's relationship with the totality of the ecosphere. Without discerning the water that we think with, reclaiming water as either sacred or holy will remain problematic. Are polluted

[1] James Joyce, *Ulysses, The Corrected Text*, ed. Hans Walter Gabler (New York: Vintage Books, 1986), 549.

waters sacred or holy? Also, if water remains dualistically constructed, is water that flows through human culture as sacred or holy as the flows of rural rivers? However, when the water that we think with is decoded and reconstructed it becomes possible to rethink water theologically. Likewise, nature, human nature, and nature-human relations may be reconstructed. The process of reimagining water makes possible alternatives such as my counternarrative "water is part of holiness," as does my reconstruction of nature as existing for its own sake, as whole and integrated, and as a space where God dwells with the whole of the world, and human beings as neighbors called by God to care and keep all abiotic and biotic entities within the world. Thus, as Lynn White, Jr. urged his readers, it is necessary to "clarify our thinking" about water before we rethink it, and prior to that, to reconsider and reconstruct nature, human nature, and nature-human relations. For ecotheologians and REMOs to rethink water as sacred or holy, an important first step is for them to clarify the water that they think with and the fuller reality of water, as well as their constructions of water-human relations.

Topics For Further Research

As I stated in chapter seven, one of the complexities of water is its multiscalar nature, from one droplet to an entire ocean. Johan Normark's article "Water as a Hyperfact" is an investigation of the shifts in meaning of water at different scales.[2] Future research into water and ecotheology might further investigate how scale changes water as an environmental issue. Three key ideas merit further investigation. First, it would be fruitful to investigate how virtual water might be understood as a hyperfact, which Normark has explained is an artefact that is widely distributed across a region (in the case of water, around the globe), may break down into its constituent form without losing its essential functions or capacities, and can exist in several physical forms and

[2] Normark, "Water as a Hyperfact," 183-206.

states at the same time.[3] Second, it would be fruitful to investigate the intersection of the idea that climate change is most readily expressed through water and the idea of scale. Most of the impact of climate change will be felt through shifts in where water is located, such as changes in shorelines, intensity of seasonal major storms, in groundwater levels, and availability of freshwater for agricultural irrigation.

An altogether different avenue of investigation is that of water and the linguistics of animacy. The semantic and grammatical characteristics of animacy exists in several languages, such as Japanese and Russian, and several Algonquin languages. In Potawatomi, which is an Algonquin language, there is a conceptual and grammatical distinction between entities with animacy and entities without animacy. As biologist Robin Kimmer writes, "English doesn't give us many tools for incorporating respect for animacy. In English, you are either a human or a thing. Our grammar boxes us in by the choice of reducing a nonhuman being to an it, or it must be gendered, inappropriately, as a he or a she."[4] In Potawatomi, water has animacy. Additionally, bodies of water are not nouns but verbs. As a result, a body of water such as a river or a bay is understood as a being. Further, bodies of water such as a bay are not nouns but are instead verbs. In my opinion, an exploration of the social construction of water in cultures whose languages think with animacy would offer numerous insights into reconstructing water and nature.

Lastly, further research should be done to investigate the variety of terms used in the New Testament for wilderness, creation, and world. There have been some excellent studies of wilderness. However, as the idea of wilderness has a dualism inherited from the Romantic period

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[3] Normark, "Water as a Hyperfact," 184.
[4] Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants* (Minneapolis, MN: Milkweed Editions, 2013).

has not been analyzed or critiqued in these texts, I would argue that a study of wilderness would be quite informative. There has been less work on understanding how the New Testament authors used the terms creation and world informed by an understanding of the modern and post-modern social construction of nature. If the New Testament authors do not use *physis* (nature) in the sense of totality of the world, then we have an enduring misunderstanding of what the larger meanings and assumptions of nature is for the New Testament communities and authors. Further, such a misunderstanding seems to give the false impression to contemporary Christians that nature is of lesser value.

Contributions

The contribution I have made is a deep examination of the water literature, as well as that of social construction, social change theory, and ecotheology. My work brings the rich resources of water scholarship into conversation with ecotheology and the activism of REMOs, and makes visible and comprehensible key issues. Also, I have identified the water that we think with as circumscribed and, for theists who understand God as relational and dwelling with the whole of the ecosphere, as an idolatry. In addition, I have given significant attention to social construction and social change theory, which ecotheological scholars and activists have not considered critically enough. Further, I have developed a model for reimaging water based on the prophetic imagination that is a useful tool for water-focused ecotheology and religious environmental organizations and congregations. Finally, my reconstructions of nature, human nature, water-nature-human relations, and water offers an alternative approach to those of water studies and the water sector that is distinctly ecotheological. For theists, my reconstructions speak into being an alternative water-human relationship and water practices that are sustainable and just.

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