

AN ETHIC OF ARIDITY: THEOLOGY, ECOLOGY, AND PLANETARY CHANGE

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Introduction

It is meaningful to be given the opportunity to reflect with you this evening upon water, theology, and ethics in an era of planetarity, in no small part because the US west has foundationally formed the geography of my life and my passion about water, values, and ethics. This lecture—An Ethic of Aridity: Ecology, Theology, and Planetary Change—is structured in three parts, each of which revolves around a core theme. The methods and results are interdisciplinary, and my task is to usher in some context for this annual convention by reminding us of what theological investigations into ecology within and beyond this society already undergird our inquiries; by orienting us to the particular arid place where we meet; and by playing with some of the multidimensional intersections of ecology, theology, and ethics—which are, in my case, always siphoned back through water.¹

I. Theology, Ecology, and Planetarity

As environmental philosopher Michael Nelson observed in 2003, water has long existed in a “metaphysical blindspot” for ethics.² Thus “water ethics” is a relatively new concept, even as customary forms of governance and some cultural or religious moral traditions have for centuries guided human patterns of relating to and distributing water. But it is only much more recently—certainly within the last few decades—that second-order scholarly reflection has turned to water as a particular site for sustained attention in environmental and social ethics.

To consider water and ethics is not merely to become versed in hydrology and normativity. It also means delving into the epistemologies, the assumptions, and the methods by which we (these diversely theorizing and ritualizing human beings) have crafted our understandings of God, the world, and ourselves. Ideas, like kin, do not exist in isolation or emerge *ex nihilo*. Thus, while I may be the first person to discuss hydrology and theology in a CTSA annual convention plenary, the family of thought informing this lecture represents a wide set of scholarly relations, or arrays and patterns of reflection and discourse. Numerous scholars and practitioners deserve sustained

¹ Selected minimal sections of this address are informed by or adapted from lectures given at Siena College (March 2017), the Trinity Institute (March 2017), the Founder’s Lecture at Barry University (November 2016), and the following essays: Christiana Zenner, “*Laudato Si’* and Standing Rock: Water Justice and Indigenous Ecological Knowledge,” in *Theology and Ecology Across the Disciplines: On Care for Our Common Home*, ed. Celia Deane-Drummond and Rebecca Artinian-Kaiser (New York: Bloomsbury, forthcoming 2018); Christiana Zenner Peppard, “Water and Racialized Infrastructure in the Era of Trump,” in *Faith and Resistance in the Age of Trump*, ed. Miguel De La Torre (Maryknoll, NY: Orbis Books, 2017); Christiana Zenner Peppard, “Commentary on *Laudato Si’*,” in *Modern Catholic Social Teaching*, 2nd ed., ed. Kenneth J. Himes (Washington: Georgetown University, 2017).

² Michael P Nelson, “Earth, air, water. . . ethics,” *Transactions of the Wisconsin Academy of Science, Arts, and Letters* 90 (2003):164–73.

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credit for bringing ecology into theological discourses; in so doing they have shaped my work as well as others'. In honor of those lineages, what follows is a briefly representative—though also quite incomplete—litany of scholars whose work has, over time, brought ecological concerns into Catholic theological work.

In his book *Greening the Church*, published in 1990, Columban missionary priest Fr. Sean McDonagh wrote a rather direct indictment of the magisterial Catholic Church's failure to address the intersection of environmental and social degradations. In his case, the frustration was born out of years spent working alongside people in developing nations whose lives were constrained by social and ecological injustices. In 1990 he wrote: "the Church has been slow to recognize the gravity of the ecological problems of the earth."³ In 1996, she who is my distinguished colleague, Elizabeth Johnson, prominently and decisively centralized questions of ecology and cosmology with her CTSA presidential address; it was, she explained, high time to turn to "a theological issue that quite literally is coming to be a matter of life or death: namely, the natural world," as well as "the entire interconnected community of life and the network of life-systems in which the human race is embedded."⁴

During this period, Leonardo Boff and Thomas Berry had also begun to write and teach about the theological relevance of ecology and cosmology. In 1997 Boff published *Cry of the Earth, Cry of the Poor*. In 1999, Ivone Gebara published *Longing for Running Water: Ecofeminism and Liberation*. So too have many scholars in the CTSA worked to refine insights from theological tradition in conversation with contemporary ecological, evolutionary, and cosmological discourses. In systematic inflections there are scholars such as Elizabeth Johnson, as well as Denis Edwards, Anne Clifford, Cristina Vanin and Neil Ormerod, the late Bill Stoeger, S.J., Celia Deane-Drummond, Stephen Pope, Ilia Delio, Dawn Nothwehr, Gloria Schaab, Jame Schaefer, and many others. Environmental ethics and Catholic theology have also been the topics of several volumes since the 1990s, such as those written by Richard Miller or edited by Maura Ryan and Todd Whitmore, Mark Allman and Tobias Winright, Jame Schaefer, Vincent Miller, and more. I am inspired and rigorously challenged by scholars of my generation who have published important essays and books in the past few years: Erin Lothes, Dan Scheid, Nancy Rourke, Daniel Castillo, and again many others. Surely much excellence is yet to come from rising cohorts, on questions and methods for which the history of Catholic theology both does and does not have resources to navigate.

In my telling of this intellectual history, ecology is bound up not just in theology but also ethics. Surely this is because of my own intellectual proclivities. I am tempted to say—in a reductionistic and quite incomplete way—that there may be a glimmer of truth in the suggestion that into an ecological frame theology can help to articulate conditions of being and ethics, the form and character of choices and relationships, in ways that have mattered profoundly to millions of Christians worldwide. As Roger

³ Sean McDonagh, *The Greening of the Church* (Maryknoll, NY: Orbis, 1990), 175–76. Noting that "at last the Church is beginning to wake up to what is at stake," McDonagh also identified the problematic endurance of "domination theology" and observed that a universalizing "anthropocentric bias" permeates Vatican II documents.

⁴ Elizabeth A. Johnson, "Turn to the Heavens and the Earth: Retrieval of the Cosmos in Theology," *CTSA Proceedings* 51 (1991): 1–14.

Haight once commented on a one-page paper he returned to me: “If knowing were not for doing, I do not know what it would be for.”

In that spirit, it is important to name specific communities that strive for intentional, ethical paradigms of governing or relating to water. Such communities—whether on municipal or digital scales—are often the places where worlds of possibility are constituted. For example, the Catholic Climate Coalition is one decentralized community of theological reflection and action; the National Catholic Rural Life Conference another; Catholic Relief Services still another. Groups immersed in particular geographies deserve mention, an in the context of a lecture on theology I want especially to lift up the charisms of communities of women religious, for whom principles guiding common life often include care for creation along with the remediation of social and environmental disenfranchisements. In the US alone, for example, there are the Adrian Dominican sisters and their Earth Justice legal work and ministry; Miriam McGillis at Genesis Farm; and others (see, for example, those chronicled in Sarah McFarland Taylor’s book *Green Sisters: A Spiritual Ecology*).⁵ In the past decade community norms have been honed to attend specifically to water, conservation, and commoditization—for example by the Sisters of Bon Secours or the Sisters of St. Joseph, and presumably in many others. These communities incarnate at very specific levels what it means to take Creation seriously. Often their environmental-social charisms for water predate papal attention to these matters. In fact, while it is surely the case that Pope Francis did many interesting and inspiring things in *Laudato Si’*, it was a significant omission not to cite communities of women religious whose charisms towards environmental and social justice already anticipated and incarnate the theological and ethical commitments put forward in the encyclical. Still, it is indisputable that *Laudato Si’* has brought the intersections of theology, ecology and ethics to mind for the general public in ways that had previously been primarily the purview of scholarly guilds such as the CTSA. Among two of the important, basic points of *Laudato Si’* are the insistence on understanding ecology as a relational-ethical term; and the framing of degradations as planetary in scope.

Ecology is a topic that is ultimately about interactions, notably the relationships and multiple forms of agencies among physical, social, and biological entities that constitute Earth. These relationships are manifold and lead to a stunning diversity of environmental sciences and ecological thought. In the late twentieth century ecological frames began to refer not just to local or regional patterns of interaction but also to massive, planetary scale.⁶ Now, in the first few decades of the twenty-first century, the idea of *planetary* has dominated as a scale of analysis within which to view environmental degradations and to express concern about patterns of relationship, which are no longer constrained to individual actors or regional dynamics but also now broaden out to describe global flows of capital, resources, political economic structures, and cognitive social constructions. In this recent flow of ideas and scales of analysis, one term has risen above others to mark the significance of planetary-scale description and evaluation: the “Anthropocene,” the term *au courant* that conveys

⁵ Sarah McFarland Taylor, *Green Sisters: A Spiritual Ecology* (Cambridge: Harvard University Press, 2009).

⁶ See, for example, Johann Rockström et al., “A Safe Operating Space for Humanity,” *Nature* 461 (24 September 2009): 472–75.

planetary thinking in an age of human-mediated environmental degradations. *Anthropocene* refers to the era of humankind's lasting and often deleterious, disproportionate impacts on earth systems given the brevity of our species' existence on earth.

Granted, in some sense the motivating insight behind the Anthropocene is not necessarily new to late modernity: As Lynn White, Jr., wrote in his famous, or infamous, 1967 article: "All forms of life modify their contexts. . . Ever since man became a numerous species he has affected his environment notably."⁷ While White was not writing about the specific neologism of the Anthropocene, his words might be said to anticipate its spirit: "The impact of our race upon the environment has so increased in force that it has changed in essence."⁸ Indeed, the claim of the Anthropocene is precisely that *Homo sapiens'* impacts on terrestrial systems have, over time, created just such a world in which cumulative changes in degree have suddenly become a difference in kind—a new geologic era, perhaps. As Michael Northcott phrases it in *A Political Theology of Climate Change*, "the geophysical consequences of the great acceleration have given humanity an unprecedented material influence over the earth."⁹ As Yuval Noah Harari suggests in *Homo Deus*, "during these millennia *Homo sapiens* became the single most important agent of change in the global ecology."¹⁰

The term "Anthropocene" was coined at the turn of this century by two scientists: ecologist Eugene Stoermer and Nobel laureate atmospheric chemist Paul Crutzen, the latter of whom happens also to be a member of the Pontifical Academy of Sciences. The Anthropocene idea—that human beings across the planet are living in a geological era characterized by anthropogenic, planetary-scale environmental degradations—is now championed by many of the world's most prominent environmental scientists and journalists (even as there is vigorous scientific disagreement about the specific stratigraphic applicability of the term on the geological time scale).¹¹ The term "Anthropocene" is noteworthy because it nicely captures an awareness of the disproportionate significance of human beings not just in reference to human history but to vast, planetary geology; because it has rapidly gained cultural and scholarly traction; and because it is being considered as an actual geological epoch by the International Stratigraphic Commission (to follow the Holocene, within the Quaternary period).

A good neologism can be a beautiful thing, but like many neologisms, like much of language, the idea of the Anthropocene illuminates some things and obscures others. It illuminates the staggering fact of disproportionate and lasting human impacts on earth systems on a global, planetary scale. It helps human beings to think beyond mammalian, hominid life spans into deep, geological time frames. Yet the idea of the

⁷ Lynn White, Jr., "The Historical Roots of our Ecologic Crisis," *Science* vol. 155, no. 3767 (March 10, 1967): 1203.

⁸ *Ibid.*

⁹ Michael Northcott, *A Political Theology of Climate Change* (Grand Rapids: Eerdmans, 2013), 2.

¹⁰ Yuval Noah Harari, *Homo Deus: A Brief History of Tomorrow* (New York: HarperCollins, 2017), 72.

¹¹ See, for example, Simon Lewis and Mark Maslin, "Defining the Anthropocene," *Nature* 519 (2015): 171–80.

Anthropocene also obscures several key considerations. Central among these is the fact that the causes and effects of planetary change are radically uneven across geographies and social groups. The communities and regions most affected by climate change, for example, are not those that historically or at present have emitted the most greenhouse gases.¹² So it is essential to consider—now, and throughout theological and ethical discussions on ecology—how currently-alluring monikers and decipherable planetary-scale trends intersect with or elide the radical particularity and patterns of privilege that shape human ecologies. Attending to the planetary must not come at the expense of specific political, economic, social, and environmental contexts that govern the quotidian conditions of people’s existence.

In my view any ethically responsible notion of the Anthropocene must hold at least three things together: the scientifically verifiable planetary preponderance of many earth systems degradations; the socially-mediated patterns of privilege, extractive mentalities, and short term commodity thinking that has been a hallmark of much western development and benefits the few while negatively impacting the many; and the “Anthropocene Paradox” problem of particularity, that is, the insight that contexts differ and require adroit specification even while participating in (or reflecting in some way) planetary trends.

What I am calling the Anthropocene Paradox here might be understood as an uneasy dialectic, one that is in several ways structurally akin to the persistent issue of how to navigate the space between ethical universals and particular applications, with all the questions of prudential judgment operative therein. I prefer to ponder that quandary through the medium of water.

II. Aridity in the Anthropocene

Among my favorite sentences in the English language is that which opens Joan Didion’s essay, “Holy Water.” “Some of us who live in arid parts of the world think about water with a reverence that others might find excessive.”¹³ Thinking about water and aridity with some reverence seems apt in the context of this annual meeting.

Aridity is a measure of water’s physical scarcity. A semi-arid environment receives between 10 and 20 inches of rainfall per year; an arid environment receives less than 10. New Mexico hovers at that cusp, with around 11 to 13 inches of annual rainfall. The Rio Grande, New Mexico’s mother river, is called an “exotic” river precisely because its sparse flow runs through such dry environments. Beyond aridity, scholars use “water scarcity” to describe conditions under which there is less water available than is demanded by various users while “water stress” refers to the inability of actors on a range of scales to procure sufficient fresh water for their needs without further degrading available water sources. In international water management, water scarcity is volumetric: less than 1000 cubic meters available per person per year. Water scarcity is influenced by many factors, such as pollution, groundwater loss, climate change, consumptive vs. nonconsumptive use, and massive infrastructural inequities in

¹² Andreas Malm and Alf Hornborg, “The geology of mankind: A critique of the Anthropocene narrative,” *The Anthropocene Review* 1.1 (2014): 62–69.

¹³ Joan Didion, “Holy Water,” at <http://www.pbs.org/pov/thirst/holy-water/> (on 8/2/17).

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an era of economic globalization.¹⁴ As the descriptions below make clear, both hydrology and social factors impact water scarcity. Five factors are important to consider when discussing water scarcity: pollution, groundwater depletion, climate change, consumptive vs. nonconsumptive use, and infrastructural dimensions.¹⁵

(1) *Pollution* arises from the contamination of fresh water supply by human waste products, storm water intrusion, agricultural effluent, or industrial/manufacturing waste. Pollution tends to most dramatically affect people who live in situations of poverty and lack viable, affordable alternatives to contaminated fresh water. The US has stronger protections than some countries owing to the Clean Water Act, but under current political conditions these look unlikely to be enforced and may even be drastically weakened. Unfortunately, water is not always quickly and strictly self-purifying, so it is best *not* to think of water as “renewable”—sometimes, it is quite finite, at least on humanly relevant time scales. This brings us to groundwater.

(2) *Groundwater* is a second factor in water scarcity. Surface water (such as rivers) percolates into groundwater, which resides in shallow or deep earthen formations known as aquifers. Some shallow aquifers can be replenished by rainfall. But not every aquifer is shallow. “Fossil water” is the term that water wonks use for groundwater in deeper caverns that are slow to recharge. The Potasco Aquifer, under part of Maryland, for example, has water that is over a million years old. So, the problem is that it is *groundwater* that has facilitated massive growth of human populations and enterprises in the twentieth century. This is not sustainable. Plus, when groundwater level drops, it often leads to the ground buckling and sinking. These dynamics now occur many places worldwide, from Beijing and Mexico City to Florida to the San Joaquin Valley in California—and even Albuquerque.

Albuquerque’s water comes partly from the distant Colorado River, partly from the local flow of the Rio Grande, and partly from the Rio Puerco aquifer underlying parts of the city. Longtime water reporter and Albuquerque native, John Fleck, explains that, as the city grew in the 1980s and 1990s, “the growing metropolis area continued to lean heavily on its aquifer, and groundwater levels beneath some parts of the city had dropped more than a hundred feet.”¹⁶ Major conservation efforts followed, to reduce demand and increase efficiency. As Fleck describes, by the heavy rainfall year of 2015 “the aquifer was rising across the big groundwater basin that underlies the Albuquerque metro area.” Success stories such as these, he says, are more frequent than many visitors to the West assume. For example, in southern New Mexico during the recent drought, some farmers were able to “idle alfalfa and cotton fields, crops that bring low returns for each gallon of water, shifting scarce supplies to keep high-dollar pecan orchards healthy and productive,” and “New Mexico’s cities fared just as well.

¹⁴ Karen Piper, *The Price of Thirst: Global Water Inequality and the Coming Chaos* (Minneapolis: University of Minnesota, 2014), 26.

¹⁵ A good primer on the first three components of water scarcity described here can be found in Karen Piper, *The Price of Thirst*. For an overview of global fresh water crises and key terms, see Christiana Z. Peppard, *Just Water: Theology, Ethics, and the Global Water Crisis* (Maryknoll: Orbis, 2014), ch. 2.

¹⁶ John Fleck, *Water is for Fighting Over—and Other Myths About the West* (Washington: Island Press, 2016), 191.

In the midst of the drought, Albuquerque cut its per capita water use nearly in half, and the great aquifer beneath the city actually began rising as a result of shift in supply and reduced demands.”¹⁷ Still, as in many parts of the Southwest, there remain real issues about how economically productive enterprises like fossil fuel extraction and agriculture use water.

(3) *Climate change* is a wide-ranging factor in fresh water scarcity and related social conflicts, and the southwest has long been seen as a crucible. Biologist Travis Huxman—former director of Biosphere II in Arizona—warned in 2008 that, “water is the hammer [with which] climate change will hit the earth.”¹⁸ A warming climate means that wet places will get wetter and dry ones will get drier. The impacts are not merely environmental; they are also social. Impacts will be felt most dramatically by people living in situations of geographic or socio-economic vulnerability. In the US, social scientists and policymakers look to the states of California, New Mexico, and Arizona as a crucible. Worldwide, water scarcity and drought have been identified as significant contributing factors in several civil wars; it is the cause of much environmental migration.

(4) The distinction between *nonconsumptive and consumptive* uses is another important concept. Nonconsumptive use means that water is cycled back into the watershed after being withdrawn—think domestic tasks such as laundry and showers. Consumptive use refers to water that is withdrawn from a source and used up in a way that does not return water to the watershed. Agriculture is the world’s most dominant consumptive use of water (since water inputs are transformed into agricultural products—think strawberries, cotton, beef). Perhaps at the reception after this plenary, you’ll think of how I told you that from vine to glass your Merlot took 29 gallons of water to produce. Yes, my friends, water is one of the most invisible and essential productive substrates in the world, and not only when it is turned into wine.

(5) A final key challenge for fresh water has to do with inequities attendant on *infrastructural dimensions of fresh water access*. Human communities invent ways to move water, identify the ends to which infrastructure projects are oriented, and ultimately adjudicate who gets what water for which purposes. In such ways it is clear that water is not merely a physical entity; it is also always interwoven with human arrangements of political economy, social structure, and power. Human geographers have a name for this insight: the “hydrosocial cycle.” In the words of one 2014 article on the topic:

The hydrosocial cycle is based on the concept of the hydrologic cycle, but modifies it in important ways. While the hydrologic cycle has the effect of separating water from its social context, the hydrosocial cycle deliberately attends to water’s social and political

¹⁷ *Ibid.*, 5.

¹⁸ Tim Hull, “Science under glass,” *High Country News* 41.9 (2009), <http://www.hcn.org/issues/41.9/science-under-glass> (on 8/2/17).

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nature. . . [It is] a socio-natural process by which water and society make and remake each other over space and time.¹⁹

There are many, many stories of justice and injustice that can be told about the hydrosocial cycle in the United States.

For example: Native American communities have been historically persecuted and pushed towards cultural extinction in the United States while their lands and rights to waters have been legally and environmentally compromised, and their sovereignty challenged for generations by governmental agencies or multinational corporations. Witness Standing Rock, the rallying cry for which was “*Mni wiconi*”—water is life. Access to clean water is often conditional upon ability to pay and directly linked to structural disenfranchisements that are the teratogenic offspring of legacies of racism or colonialism. The revelation of lead in the water in Flint, Michigan; in Newark public schools; and in multiple other under-funded, under-protected, and under-maintained systems puts a painful and proximate point on water as a public health crisis that disproportionately affects populations already made vulnerable by poverty and legacies of structural racism. (For a very teachable and very important primer on water as an intersectional issue, I emphatically recommend the February 2017 report of the Michigan Civil Rights Commission, “The Flint Water Crisis: Systemic Racism Through the Eyes of Flint,” which argues that a truth and reconciliation commission should be set up to help communities enact moral justice for this massive failure).²⁰

Water, it turns out, is more than a marvelous molecule. It is social and plural. When it comes to water, entire constructs of meaning and value, decision-making patterns and norms vary not only nation to nation but region to region and yes, also religion to religion. As such, approaches to fresh water scarcity vary dramatically around the world, and despite the ubiquity of water on earth there is no one-size-fits-all solution to fresh water challenges. This may strike some people as counter-intuitive, unnecessarily murky inducing, or existentially exhausting. As the BBC quipped in 2005, “If you want to induce mental meltdown, the statistics of the worsening global fresh water crisis are a surefire winner!” In other words, fresh water supplies a prime example of what I earlier called the Anthropocene Paradox: how planetary-scale environmental trends intersect with the radical particularity of human ecologies, that is, with the contexts that govern the quotidian conditions of people’s existence, for better and for worse. Any universal approach to water will have to accommodate certain place-based epistemologies of what kind of thing water is, what relations it is allowed to sustain, and a cognizance of social practices and institutions. So how are we to proceed?

¹⁹ Jamie Linton and Jessica Budds, “The Hydrosocial Cycle: Defining and Mobilizing a Dialectic-Relational Approach to Water,” *Geoforum* 57 (November 2014): 170–80; Rutgerd Boelens et al. expand the notion to “hydrosocial territories as spatial configurations of people, institutions, water flows, hydraulic technology and the biophysical environment that revolve around the control of water” (see Boelens et al, “Hydrosocial territories: A Political Ecology Perspective,” *Water International* 41.1 [2016]: 1–14).

²⁰ Michigan Civil Rights Commission, “The Flint Water Crisis: Systemic Racism Through the Eyes of Flint,” at <http://www.michigan.gov/mdcr/0,4613,7-138-405318--,00.html> (on 2/17/17).

I always recommend beginning with the place that is closest to you. This may be the place that you inhabit; it may be the place that has shaped your cognizance of water. For the purposes of this lecture, it will be the region where we now sit. Speaking of dynamics of water in the region surrounding Albuquerque must include the 1922 Colorado River Compact, which divided water volumetrically among seven states; historic norms like prior appropriate and beneficial use; and many customary interpretations that originated in the Manifest Destiny-era hydraulic endeavors that sought to view the US west as a “New Eden,” a democratizable and economically (especially agriculturally) productive region in and through the corralling and distribution of fresh waters.

In a place like Albuquerque, as for much of the US west and southwest, foundational conditions of aridity have helped to make visible the stakes of how water is defined and distributed. Scholars and policymakers here know, for example, that on regional levels the volumetric assumptions detailed in the Colorado River Compact do not necessarily correspond to the annual flows of the river, leading to complications when states want their legal allotments but the water is simply not there to claim. Fleck now argues that Albuquerque has done exceptionally well conserving water and as such the problems it faces are in fact “in microcosm, the problems facing the Colorado River going forward.”²¹ This runs counter to the dominant apocalyptic narrative of aridity, overextraction, and civilizational decline that has been so enticing since Marc Reisner published *Cadillac Desert* in the 1980s.²² On the scale of cities, planners increasingly suggest that water management can be much more intentionally linked to land use regulations. And while efficient water use is an enormous value in arid regions, it is also the case that from an ethical standpoint water policy should not just about maximally efficient use or beneficial use—also known as “highest and best use”—that is usually interpreted in a primarily economic way. Very much in flux is the question of how societies might manifest the value of water in tangible ways, protecting it for future generations and non-human nature as well.

III. Water Ethics in the Anthropocene

“A plant on the edge of the desert is said to struggle for life against the drought; though more properly it should be said to be dependent on the moisture.”

– Charles Darwin, *Origin of Species*

Like many of us here, I want to believe that there are some general features of life that are amenable to the articulation of a universal morality, even if its content—to paraphrase my mentor Margaret Farley—may be more cautious and narrowly circumscribed than has been assumed in the masculinist, western-dominated forms of western philosophy and theology that have been seen as authoritative in much global international scholarship and political decision-making. As I have written elsewhere, I am committed not just cautiously but fervently to the insight that fresh water is *sui*

²¹ Fleck, *Water is for Fighting*, 170.

²² Marc Reisner, *Cadillac Desert: The American West and its Disappearing Water*, rev. ed., (New York: Penguin Books, 1993).

generis and *sine qua non* for life on earth, including but not limited to the human. This to me seems grounds for a universal morality if ever there were some!

At the same time, I am an intersectional feminist who insists upon a key presumption of scientific inquiry: the contours of our ignorance are significant, as well as our measurable and proveable assertions, which are ever developing and worthy of ongoing refinement.²³ Ethicists and theologians should constantly ask: what voices, values, and insights have been elided or ignored? Also, while attending to the shape of our ignorance, what could a pluralistic, planetary-and-place-based universalism look like? Mulling this question, I returned to David Hollenbach's idea of "dialogic universalism:"

It is universalist in that it presumes that human beings are sufficiently alike in that they all share certain very general characteristics in common and that the same general outlines of well-being are shared in common as well. . . . but at the same time the pursuit of the common good is dialogic. Cultural differences are so significant that a shared vision of the common good can only be attained in a historically incremental way through deep encounter and intellectual exchange across traditions.²⁴

This reminded me of Pope Francis' 2015 speech in Bolivia, when he talked about his aspiration: "to bring peoples and cultures together in a form of coexistence which I would call polyhedric, where each group preserves its own identity by building together a plurality which does not threaten but rather reinforces unity."²⁵ He didn't delve into what this looked like or meant exactly, but I am all for polyhedric approaches, and not just because water is a polyhedron (technically, it is a polar, tetrahedral molecule).

How might polyhedric dialogical universalism look with regard to water? Well, a foundational problem of water is hydrosocial: it tends to flow—that is, it is often directed towards and benefitting—social, political, or economic power in ways that can elide access for human and nonhuman others, across space and time. Since the idea of the human right to water is one that has gained attention and endorsement from the UN and from popes going back to John Paul II, I will use it as an example. Human rights is not of course the only viable language for articulating ethical universals, nor necessarily the best, though it may be the most recognized at present. In my view, human rights discourse provides a rhetorical-moral language that can frame intersections of ecological and social well-being for international ethical-political agendas. Scholars such as David Hollenbach and Meghan Clark point out that human rights language is valuable and useful when it strives to make moral ideas universally accessible within a framework of international communication and action on matters

²³ Stuart Firestein, *Ignorance: How It Drives Science* (New York: Oxford University, 2012).

²⁴ David Hollenbach, *The Common Good and Christian Ethics* (New York: Cambridge University, 2002), 152–53.

²⁵ Pope Francis, "Speech at World Meeting of Popular Movements," Santa Cruz, Bolivia (July 2015), at http://en.radiovaticana.va/news/2015/07/10/pope_francis_speech_at_world_meeting_of_popular_movements/1157291 (on 7/13/17).

of development and justice. But critics argue that human rights frameworks are almost always based in Western philosophical assumptions and can be highly individualistic and anthropocentric in ways that imperil more-than-human entitlements, or fail to recognize the essential interdependence of ecological and human wellbeing.

The Church since the time of John Paul II has affirmed the idea of a human right to water, and it has done so with increasing insistence. In speeches, then letters, in the *Compendium of the Social Doctrine of the Church*, and then encyclicals, the Catholic Church argues in no uncertain terms that water is a human right because access to fresh water is foundational to the achievement of all other rights.²⁶

Granted, both the Church's analysis and international human rights paradigms are anthropocentric. For a substance such as water, which mediates so many forms of existence and relationship, it is worth asking: How far can or should the sphere of rights entitlements extend—for example, might other animals or ecosystems have rights (in this case, to the integrity of waters)? Even more strongly, might water itself—however understood—have a right to exist, for example, in an uninterrupted, undredged state? Might this slippery substance be deserving of rights? Such notions may sound far-fetched to some scholars, but in fact they are not so far afield because something distinctive and pervasive—if not quite planetary—is now happening with cultural and even papal turn to inclusion of indigenous voices as stewards and moral authorities on ecological and social justice. In other words, the rise of diverse indigenous voices in unity (as at Standing Rock) against the onslaught of industrial western values in age of digitally mediated activism is occurring just as there is a sustained papal insistence on the value of such communities' embedded ecological knowledge, social structures, and self-determination. Truly, this alignment strikes me as something radically new in the history of the Catholic Church.

Consider, for example, the 2010 “Declaration of the Rights of Mother Earth,” which resulted from the massive World People's Conference on Climate Change in Bolivia. The declaration identifies certain entitlements that are due to the Earth—notably imaged here as Mother, and in far less sexualized and violent ways than in the opening paragraphs of *Laudato Si'*—“without distinction of any kind, such as may be made between organic and inorganic beings, species, origin, use to human beings, or any other status.”²⁷ The document further holds that Mother Earth has a right “to regenerate its biocapacity and to continue its vital cycles and processes free from human disruptions,” which prominently includes “the right to water as a source of life.” Finally, in his address to the UN, Francis invoked a “right of the environment”—though he did not stipulate whether that meant a right of people to a healthy environment, or a right of the environment itself to exist as the result of the creative energies of an all-powerful and loving God.²⁸

Might non-human entities be intrinsically, and not merely extrinsically, valuable? What would theological ethics look like if it unsettled the notion of person? Of course, “what sort of thing is a person” has been a theological and philosophical inquiry for

²⁶ See Peppard, *Just Water*, chs. 3 and 4.

²⁷ World People's Conference on Climate Change, “Declaration of the Rights of Mother Earth,” 2010, at <https://pwccc.wordpress.com/programa> (on 7/14/2017).

²⁸ Pope Francis, “Address to Members of the General Assembly of the United Nations,” New York, September 25, 2015, at <http://www.popefrancisvisit.com/schedule/address-to-United-nations-general-assembly/> (on 7/14/2017).

centuries, if not millennia. Whether parsed through the *imago Dei* or the capacity to exercise reason, whether by the color of one's skin or the shape of one's reproductive tracts, much ink has been spilled over the question of what constitutes personhood and what moral rights and duties are attendant therein. Might biophysical entities that long preceded *Homo sapiens*, and upon which the possibility of our existence is founded, be regarded as moral persons? Or somewhat more snarkily: If, in the present era, a corporation can be a legal person, could not a river be a legal person as well?

It is a dramatically new feature of international discourse that this idea is no longer far-fetched in normative and legal discourses. In March 2017, a river in New Zealand as well as the Ganges and one of its tributaries in India were found to have standing as legal entities akin to persons precisely because of their longstanding cultural value and the ontology of rivers as whole entities, not merely or exclusively as bits of property. In other words, in these contexts rivers have just this year, for the first time ever, been granted legal status in western societies, with concomitant rights and duties, with trusteeships established to oversee such matters! We live in interesting times.

I know my limits, one of which is time; this plenary must come to a close. Another limit is expertise; I am neither hydrologist nor water manager. I am a scholar and a teacher, an observer of words and worlds. I am fascinated by what life-giving values flow from the foundational understandings of a variety of religious or cultural systems, and what implications these have for water-related action. What kind of thing is water, that multiple and ever-in-motion liquid, that hydrosocial substance, that medium of power and maker of lives? What implications these bear for individual, social, and societal action?

In the spirit of careful universalism, I believe that an ethics of water would be oriented toward the flourishing of many beings and systems, especially but not only human, in the short and long term, precisely because water is *sui generis* and *sine qua non*. It should incorporate multiple levels of subsidiarity, refracted centrally through watershed scales in ways that are accountable to marginalized communities, longstanding cultural insights and traditions, as well as local, state, and national policies and legal vernaculars. It's worth considering what would happen if societies around the world began to think in terms of watersheds as social and ecological action units, or rivers as whole entities instead of volumetric and parceled property?

Any stalwart and sufficient ethic of water justice will require that the people most affected by water decisions have a strong voice at the table of decision-making, attuned to asking: who benefits, in what ways? Who bears the burdens, for what duration? What is it that we are not yet seeing? As Pope Francis wrote in *Laudato Si'*:

A number of questions need to be asked in order to discern whether or not [a given project] will contribute to genuine integral development. What will it accomplish? Why? Where? When? How? For whom? What are the risks? What are the costs? Who will pay those costs and how? In this discernment, some questions must have higher priority. For example, we know that water is a scarce and indispensable resource and a fundamental right which conditions the exercise of other human rights. This indisputable fact overrides any other assessment of environmental impact on a region.²⁹

²⁹ Pope Francis, *Laudato Si'* (24 May 2015), no. 185. All papal documents available on the Vatican website. See, e.g.,

Finally, any sufficient ethic of water justice will recognize that the discernment and implementations of norms and policies are hardly static. Water, both noun and verb, is a trickster: always in motion and context-specific, it takes the shape of any container—whether a vessel or a river, a political-economic system or a religious ritual. Yet amidst that diversity, there is still a universal truth: water is life.

Writer Craig Childs took my breath away when in *Orion Magazine* last year he stated that “water is a verb.”³⁰ Surely, water is a shape-shifting entity, a liquid that takes the shape of its container, whether that be physical or cultural. But a verb! If this is the case, then water is much like other sparkling and irreducible notions that hover in the space between noun and verb: vital concepts like—life, love, culture, ethics. As such, water—like life, love, culture, ethics—refracts multiple notions of morality and the sacred; its many incarnations require an ethics of dynamism, one that is always being written. Regardless of whether few or many people regard water with a Didion-esque “reverence that others might find excessive,” we will do well to remember that human beings and many other life forms are in fact, as Darwin nicely phrased it, “dependent on the moisture.”

http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html on 7/14/2017.

³⁰ Craig Childs, “The Birthplace of Water,” *Orion Magazine* (January/February 2016).