

Hydrology, Theology, and *Laudato Si'*

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Abstract

The encyclical *Laudato Si'* is a sustained theological and ethical reflection on ecology. Within *Laudato Si'* the topic of fresh water is useful to consider as a contemporary issue foregrounded in the first chapter of the encyclical and as a representative topic for how the natural and social sciences are integrated into the pope's modes of ethical analysis. A consideration of fresh water as a socio-natural substance in a pluralistic age suggests important directions for social ethics and moral theology in an era characterized by planetary degradation, social exclusions, and embodied burdens.

Keywords

Catholic Social Teaching, ecology, ecological theology, environmental ethics, fresh water, human rights, indigenous cultures, *Laudato Si'*, natural law theory

Laudato Si' is a sustained theological and moral reflection on the multifaceted idea of ecology in ways that generate spiritual insights and ethical obligations.¹ This article first depicts a selected history of the magisterium's environmental turn over the past several decades. That background provides historical and conceptual grounding for the second section, which analyzes how fresh water is theologically and ethically presented in *Laudato Si'* and advances two main claims: as a contemporary issue foregrounded in the first chapter of the encyclical, fresh water serves as a representative topic for how the natural and social sciences are integrated into the pope's

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1. Pope Francis, "Laudato Si': On Care for Our Common Home" (May 24, 2015), http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html.

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mode of ethical analysis; and the encyclical's statements on fresh water also represent a distilled and slightly expanded version of magisterial teaching on this topic that has been in development for over a decade.

The next section of this article maps directions for future scholarship and pressing questions regarding normative ethics in an era of pluralism, environmental degradation, and social exclusions. The particular topics suggested as requiring further scholarly attention are: lingering questions about ethical paradigms such as human rights and concomitant notions of development or liberation; ongoing questions about water and the global economy; natural law methodology involving socio-natural realities such as water, ecology, and gender; and the significance of the pope's appeal to indigenous cultures in *Laudato Si'*.²

Catholic Ecologies and *Laudato Si'*

The church's turn to matters environmental, economic, and more broadly ecological is not merely the invention of one popular pope; as many scholars have noted (and some journalists have quoted) this shift has been underway for some time and has been amplified since the 1990s. It is telling to attend to the magisterium's formal, official pronouncements because the church has a centralized governance structure, a prominent authority figure in the person of the pope, and councils and congregations through which doctrinal documents occupy varying levels of dogmatic or practical authority. In that hierarchy of authoritative documents, encyclicals hold a particular pride of place, and so it is significant that *Laudato Si'*, while not the first encyclical to express concern about environmental and social degradations, centralizes the ecological question. *Laudato Si'* draws on and integrates selected strains of Catholic intellectual, moral, and spiritual traditions.

The encyclical that first opened the conceptual possibility for the incorporation of environmental and ecological thinking was Paul VI's *Populorum Progressio* (1967), which included the notion of authentic development, an idea that has itself become integral to magisterial reflection on the intersections of political economy and social and environmental flourishing (as in Benedict XVI's 2009 encyclical, *Caritas in Veritate*, which commemorated *Populorum Progressio*). Paul VI was also the first pope to address the UN on matters of environmental degradation, as Marjorie Keenan notes in her anthology of papal teachings on the environment.³ The idea that human activities damage nature and could subsequently entail the possibility of self-inflicted destruction emerged in *Octogesima Adveniens* and recurs throughout subsequent Catholic Social Teaching (CST). Numerous addresses, letters, and encyclicals during the papacies of John Paul II and Benedict XVI developed these themes. Chronologically, the 1990s and the first decade of the 21st century were pivotal for the magisterium's

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2. The author extends significant appreciation to three anonymous reviewers for perceptive, incisive suggestions that helped strengthen this article.
 3. Marjorie Keenan, *From Stockholm to Jerusalem: An Historical Overview of the Concern of the Holy See for the Environment, 1972–2002* (Vatican City: Vatican, 2002).

turn to environmental realities and ecological thought. In fact, it is inaccurate to read Catholic magisterial tradition before that point as self-consciously concerned with matters ecological. As Columban priest and missionary Sean McDonagh observed in 1990, “It is a fact of recent history that the Church has been slow to recognize the gravity of the ecological problems of the earth.”⁴

A fuller ecological focus can be dated to 1990, when John Paul II identified a “lack of due respect for nature” in that year’s papal Message for the World Day of Peace, a speech in which the pontiff clearly noted that the “ecological crisis” is “a moral problem” and identified a “human vocation to participate responsibly in God’s creation.” Also in the 1990 Message, John Paul II stipulated themes of interconnectedness and responsibilities to future generations (“we cannot interfere in one area of the ecosystem without paying due attention both to the consequences of such interference in other areas and to the well-being of future generations”);⁵ identified the importance of recognizing that the earth is a gift from God and thus a common heritage meant for the benefit of all; called for solidarity between industrialized and developing nations; restated the fundamental need to respect life; and asserted that there is a “right to a safe environment” that “must be included in an updated Charter of Human Rights” and attained through international collaborations.⁶ These themes have percolated through subsequent papal documents. In 1995, John Paul II’s encyclical *Evangelium vitae* addressed issues of human dignity and respect for life, including a (brief, relative to the overall length of the document) mention of “the ecological question.” Here John Paul II also evoked the idea of “human ecology,” pointing to the importance of properly ordered relationships among human beings as expressed through particular kinds of actions.⁷

In 2002, John Paul II collaborated with the environmentally minded Ecumenical Patriarch Bartholomew (who has, since assuming the Patriarchate of the Orthodox Church, made ecological issues a signature theological and pastoral charism). The two leaders co-signed the “Common Declaration on Environmental Ethics,” expressing serious concern about human suffering and “the negative consequences for humanity and for all creation resulting from the degradation of some basic natural resources such as water, air and land, brought about by an economic and technological progress which does not recognize and take into account its limits.”⁸ Constructively,

4. 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.

5. John Paul II, “Message for World Day of Peace” (January 1, 1990) 6, https://w2.vatican.va/content/john-paul-ii/en/messages/peace/documents/hf_jp-ii_mes_19891208_xxiii-world-day-for-peace.html. (This and all subsequent URLs were accessed on February 3, 2016.)

6. *Ibid.* 7.

7. John Paul II, *Evangelium Vitae* (March 25, 1995) 42. http://w2.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf_jp-ii_enc_25031995_evangelium-vitae.html.

8. John Paul II and Ecumenical Patriarch Bartholomew I, “Common Declaration on Environmental Ethics,” http://w2.vatican.va/content/john-paul-ii/en/speeches/2002/june/documents/hf_jp-ii_spe_20020610_venice-declaration.html.

they noted that “Christians and all other believers have a specific role to play in proclaiming moral values and in educating people in ecological awareness, which is none other than responsibility towards self, towards others, towards creation.” They asserted that “What is required is an act of repentance on our part and a renewed attempt to view ourselves, one another, and the world around us within the perspective of the divine design for creation. The problem is not simply economic and technological; it is moral and spiritual.” It is worth noting that notions of ecological sin and broader theological alignments with Orthodox Christian understandings of ecology are abundantly evident in *Laudato Si'*.

In 2004 the Pontifical Council for Justice and Peace promulgated the official *Compendium of the Social Doctrine of the Church*, which devoted an entire chapter to the environment.⁹ After his election in 2005, Pope Benedict XVI continued the trajectory by noting ideas of authentic or integral development, human ecology, and environmental degradation and sensitivity to the vulnerable and suffering in an era of economic globalization and technical power. In particular, Benedict’s encyclical *Caritas in Veritate* (2009) devoted chapter 4 to “the development of people, rights and duties, and the environment.”¹⁰ Concern for environmental degradation as a part of disordered economic and political relationships, an emphasis on interrelated human and environmental ecologies, and the obligations of highly developed nations to take up duties of effectual solidarity are all themes that appear in *Caritas in Veritate*.

This brief overview of the emergence of magisterial Catholic attention to ecological realities demonstrates the existence of a substantial, if multifaceted, conceptual grounding for the promulgation of *Laudato Si'*. In addition, many observers have commented that the current pope seems to offer an especially potent charism for ecological issues. Immediately after Pope Francis chose his ecologically and poverty-minded namesake, he mused in his inaugural address, “these days we do not have a very good relationship with Creation, do we?”¹¹

Prior to his election to the papacy, Cardinal Bergoglio had witnessed and engaged situations of extreme poverty and the impacts of environmental degradation during his years in South America, and his pastoral experiences overlapped temporally with the rise of liberation theology. While Bergoglio’s historical relationship to liberation theology is complicated, the pope has also made clear his commitment to stances

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9. Pontifical Council for Justice and Peace, *Compendium of the Social Doctrine of the Church*, (May 26, 2005), chap. 10, http://www.vatican.va/roman_curia/pontifical_councils/justpeace/documents/rc_pc_justpeace_doc_20060526_compendio-dott-soc_en.html.
 10. For analysis of Benedict XVI’s contributions to environmental notions, see the essays in Tobias Winright and Jame Schaefer, eds., *Environmental Justice and Climate Change: Assessing Pope Benedict XVI’s Vision for the Church in the US* (Lanham, MD: Lexington, 2013).
 11. Pope Francis, “Address of the Holy Father Pope Francis,” (March 16, 2013), https://w2.vatican.va/content/francesco/en/speeches/2013/march/documents/papa-francesco_20130316_rappresentanti-media.html.”

such as the preferential option for the poor and critiques of structural (especially political and economic) forms of oppression that exclude many people from meaningful opportunities and basic conditions of human dignity. Moreover, the influence of a “see–judge–act” methodology in his theological and pastoral work (including *Laudato Si’*) has been noted, and Bergoglio was a central figure behind the 2007 Aparecida document issued by the Latin American Bishops.¹² In sum, given the convergence of the pope’s personal-pastoral charism and the trajectory of magisterial reflection on ecology and environmental degradation since the 1990s, *Laudato Si’* can hardly be said to have emerged *ex nihilo*.

Neither did members of the Roman Curia increasingly focus attention on theological and moral dimensions of environmental concern without guidance. Scholars and practitioners outside of the magisterium—and in varying relationships of proximity or distance, embrace, or détente with regard to official church leadership—have long identified important themes and offered trenchant, constructive analyses on topics related to environmental concern, often informed by developments in the natural and social sciences. For example, while official Catholic teaching has been resolutely anthropocentric in the modern era, scholars decades ago began to argue persistently that Catholic teachings on creation are not only anthropocentric but are also theocentric, whereby care for the earth as a gift of God is a moral responsibility, and wherein there is also room to appreciate nature as such because it is created and deemed good by God. Scholars working in ecological theology and Catholic Social Teaching have created robust contemporary discourses at the intersections of systematic theology, ecology, and ethics.¹³

In the current period, there are many ongoing conversations about ecology, theology, and moral theory.¹⁴ Clearly, not all of them are Catholic and not all are scholarly: practitioners around the world have much knowledge to share. (As McDonagh aphorizes, “an ounce of practice is worth a tonne of theory.”¹⁵) Innumerable important advances in ecological theology have also occurred in ecumenical (Orthodox and Protestant) and interreligious frameworks, and some of these are reflected in the

12. Latin American Episcopal Conference (CELAM), *The Aparecida Document: Fifth General Conference of the Bishops of Latin America and the Caribbean* (2007). For analysis, see the essays in Robert S. Pelton, ed., *Aparecida: Quo Vadis?* (Scranton: University of Scranton, 2008).

13. See, for example, the essays in Maura Ryan and Todd Whitmore, eds., *The Challenge of Global Stewardship: Roman Catholic Responses* (Notre Dame: University of Notre Dame, 1997); Elizabeth Johnson, *Ask the Beasts: Darwin and the God of Love* (New York: Bloomsbury Academic, 2014); Ilia Delio and Keith Douglass Warner, *Care for Creation: A Franciscan Spirituality of the Earth* (Cincinnati: St. Anthony Messenger, 2006); Denis Edwards, *Ecology at the Heart of Faith* (Maryknoll: Orbis, 2006); Leonardo Boff, *Cry of the Earth, Cry of the Poor* (Maryknoll: Orbis, 1997); and McDonagh, *The Greening of the Church*.

14. See, for example, Willis Jenkins, “After Lynn White: Religious Ethics and Environmental Problems,” *Journal of Religious Ethics* 37 (2009) 283–309.

15. McDonagh, *Greening of the Church* 198.

encyclical.¹⁶ It can be said, then, that *Laudato Si'* contains a variety of particular tropes of Catholic tradition, expressed through the distinctive pastoral-theological charisms of Pope Francis, and cross-pollinated with many different forms of extra-magisterial insights. The resulting document is wide-ranging, and there are many possible points of entry and analysis.

This article takes fresh water as a hermeneutical key for examining certain themes in, and questions raised by, *Laudato Si'*. The focus on fresh water ought not to minimize the importance of saline or brackish waters, which are also (though differently) vital. Neither does this article launch a full normative ethical argument about water (though that too is an important project). Rather, adopting a hydrological hermeneutic for *Laudato Si'* enables the identification and consideration of several important conceptual and methodological elements that may have implications for ways of proceeding in moral theology and social ethics in an era of pluralism, planetary environmental degradation, social exclusions, and embodied burdens. As a result, the main project of this article is to parse how a hydrological hermeneutic illuminates key insights from *Laudato Si'*, to map related moral possibilities and fissures, and in so doing to suggest future lines of inquiry and analysis for Catholic environmental ethics, ecological theology, and moral theory.

A Hydrological Hermeneutic for *Laudato Si'*

It has been widely noted that the descriptive claims found in *Laudato Si'* about environmental degradations are built upon scientific consensus. The examples foregrounded in the first chapter of the encyclical include pollution and climate change, water, and biodiversity loss. (These are joined by concerns about human quality of life and global inequality.) In particular, paragraphs 28–30 and 187 of *Laudato Si'* pithily and authoritatively stipulate that fresh water is a vital substance and a fundamental human right in an era of increasing scarcity, widespread poverty, and environmental degradation. How do such claims align with data from the contemporary natural sciences, social sciences, and emerging water ethics discourse?

Globally, 97% of water on earth is saline. The remaining 3% is fresh water, and of that, most of it (70%) is locked in glaciers or in polar regions. Approximately 30% is groundwater, while the remaining fraction of a percent of all fresh water on earth is surface water: lakes, rivers, rain, and the visible parts of the hydrologic cycle. Surface and shallow groundwater sources interact to varying degrees and are often replenished by seasonal precipitation. For most of human history, surface water and shallow groundwater quenched the thirst of individuals, productive enterprises, and civilizations, but this is no longer the case: as more water has been required for various

16. See, for example, Daniel P. Scheid, *The Cosmic Common Good: Religious Grounds for Ecological Ethics* (New York: Oxford University, 2016); John Chryssavgis and Bruce Foltz, eds., *Toward an Ecology of Transfiguration: Orthodox Christian Perspectives on Environment, Nature, and Creation* (Bronx: Fordham University, 2013); John Chryssavgis, ed., *On Earth as in Heaven: Ecological Vision and Initiatives of Orthodox Patriarch Bartholomew* (Bronx: Fordham University, 2011).

functions (agricultural, industrial, and domestic), feats of hydraulic engineering have enabled individuals and societies to extract, corral, and siphon available surface water and groundwater towards socially, politically, and economically incentivized goals. It is especially noteworthy that water in aquifers—deep underground repositories of fresh water—is being depleted at unsustainable rates around the world, and dynamics of climate change will further amplify regional realities of water scarcity. So, too, just because fresh water is available does not mean it is potable. Water pollution is a major issue worldwide as a result of domestic, industrial, and agricultural functions. Many water sources worldwide have been profoundly impacted or depleted.

To be sure, the laws of physics still apply: in an absolute sense, net amounts of water's molecules are neither created nor destroyed. But it is also the case that evaporation and evapotranspiration in a context of globally warming temperatures mean that higher concentrations of water vapor in various parts of the globe are shifting regional patterns of precipitation and soil moisture, impacting local and regional available water supplies. In other words, despite its persistence, fresh water is not always where human societies want or need it to be. Pope Francis's remarks in *Laudato Si'* align succinctly with contemporary hydrology and social science on the impacts of declining fresh water reserves, as when he writes that

Fresh drinking water is an issue of primary importance, since it is indispensable for human life and for supporting terrestrial and aquatic ecosystems. Sources of fresh water are necessary for health care, agriculture and industry. Water supplies used to be relatively constant, but now in many places demand exceeds the sustainable supply, with dramatic consequences in the short and long term. Large cities dependent on significant supplies of water have experienced periods of shortage, and at critical moments these have not always been administered with sufficient oversight and impartiality. Water poverty especially affects Africa where large sectors of the population have no access to safe drinking water or experience droughts which impede agricultural production. Some countries have areas rich in water while others endure drastic scarcity. (*LS* 28)

In the subsequent paragraph, Francis adds: "Underground water sources in many places are threatened by the pollution produced in certain mining, farming and industrial activities, especially in countries lacking adequate regulation or controls." Through these passages, *Laudato Si'* transmits contemporary scientific consensus as a backdrop for moral exhortation: environmental degradations are interwoven with ethical concern for social exclusions and violations of human justice, with particular concern for people living in situations of poverty. Thus, Francis's statement that "one particularly serious problem is the quality of water available to the poor" (*LS* 29) epitomizes a broader set of moral-ecological commitments.

There is certainly a fundamental connection between access to potable water and the possibility and quality of human life. Water-related suffering is wrought most consistently on people living in situations of poverty. The statistics are staggering: approximately one thousand children die daily from preventable water-borne diseases; nearly a billion people lack access to clean, fresh water and adequate sanitation; women worldwide bear an undue burden when fresh water and sanitation infrastructure are

unavailable or insufficient;¹⁷ and the depletion of groundwater has been particularly problematic for subsistence farmers, especially but not exclusively in arid regions.¹⁸ Researchers now identify complex, important connections between water scarcity (especially prolonged drought) and conflict—as in the Sudan and Syria—where the lack of potable fresh water contributes to crop failures, internal displacement of peoples, sudden urbanization, and subsequent social instability, including the possibility of violent conflict.

Since at least 2003 John Paul II, Benedict XVI, the Pontifical Academy for Justice and Peace, and now Pope Francis have articulated the importance of access to clean, fresh water. These concerns include: the lack of access to fresh water in non-industrialized nations; the impacts on the poor and vulnerable; the ways in which commodification of water impedes access to this fundamental good; and the corrective conceptual mechanism of viewing fresh water as a fundamental human right.¹⁹ Pope Francis reiterates such notions in *Laudato Si'*, adding, “Our world has a grave social debt towards the poor who lack access to drinking water, because they are denied the right to a life consistent with their inalienable dignity” (*LS* 30). (In his address to the United Nations on September 25, 2015, he further explained that water is among the things that allow people “to be dignified agents of their own destiny.”²⁰)

For the church, the grounding for the idea of a human right to water is theological. Water is a gift from God. It is a good of creation that is intended for everyone, without discrimination, across time and space. It is a human right because it is fundamental to the achievement of any and all other rights. It should not be owned or controlled by the few at the exclusion of the many. The development of ideas about fresh water and its significations represents an important expansion of modes of theological discourse, informed by contemporary natural and social sciences and the environmental humanities.

17. These burdens include: the physical stress of walking hours per day in parts of the world to gather water that may or may not be contaminated, the practical upshot that education is impossible when one’s day is spent gathering water, and the risk of sexual assault while procuring water or seeking private areas for sanitation.

18. In June 11, 2015 Pope Francis noted to an international audience of the Food and Agricultural Organization certain aspects of the climate change-related problems of food and water: “Climate change also makes us think of the forced displacement of populations and the many humanitarian tragedies caused by lack of resources, particularly water, which is already a source of conflict that is expected to increase. It isn’t enough to assert that there is a right to water without making the effort to achieve sustainable consumption of this good and to eliminate any waste. Besides water, land use also remains a serious problem.” See <http://www.news.va/en/news/pope-to-participants-of-faos-39th-conference-respo>.

19. See Christiana Peppard, *Just Water: Theology, Ethics, and the Global Water Crisis* (Maryknoll: Orbis, 2014) chap. 4; and Christiana Peppard, “Fresh Water and Catholic Social Teaching: A Vital Nexus,” *Journal of Catholic Social Thought* 9 (2012) 325–51.

20. Pope Francis, “Address of the Holy Father to the General Assembly of the United Nations Organization” (September 25, 2015) http://w2.vatican.va/content/francesco/en/speeches/2015/september/documents/papa-francesco_20150925_onu-visita.html.

Ecologically inclined theologians and ethicists have certainly made suggestive connections with water as well. For example, water is woven into analyses offered by scholars such as Elizabeth Johnson, James Keenan, Ivone Gebara, Sean McDonagh, and others. Especially germane is McDonagh's 2003 argument for the connection between water and religious ethical obligation in his book, *Dying for Water*: "People of every religion, but particularly Christians, are called to dedicate their lives in service of the world and the poor of the world. Working to protect water and make sure that it is available freely to everyone on the planet is following in the way of Jesus in our world today."²¹ Gary Chamberlain and John Hart have independently suggested that polluted or privatized, commodified water might lose its sacramental efficacy.²² What *Laudato Si'* adds to these scholarly reflections is a publicly visible, magisterially authoritative invitation to mobilize moral language and to query and eventually address discrepancies of power, justice, and human dignity related to fresh water. In *Laudato Si'*, fresh water is viewed as a substance that mediates ethical relationships, as a human right to which all people are entitled as a foundation of their God-given dignity, and as a marker of ecological and social debts owed from denizens of developed nations to those who have born the costs of other people's privilege or power.

Economic valuations of water must be subordinated to frameworks of human rights, argues Pope Francis in *Laudato Si'*. Like his predecessors, the pope critiques the commodification and privatization of fresh water resources, stipulating that "*access to safe drinkable water is a basic and universal human right, since it is essential to human survival and, as such, is a condition for the exercise of other human rights*" (LS 30, italics original). Later, he restates: fresh water "is a scarce and indispensable resource and a fundamental right which conditions the exercise of other human rights" (187). While specific implications of these statements remain to be seen, it is surely the case that the visibility of the institutional Catholic Church and its support of the notion of the right to water will have some kind of practical impact.

Of course, reflection at the intersections of hydrology, theology, and ethics are by no means exclusive to Catholic discourses. Ecumenically, many Protestant denominations (including the Presbyterian-USA Church, the Evangelical Lutheran Church in America, and the World Council of Churches' Ecumenical Water Network) have for years offered significant theological and pastoral reflection on these topics as well as venues for action; for example, a 2006 publication on *Water: Gift of Life* by the World Council of Churches refers to "indifference to water" as "blasphemy against God the Creator" and a "crime against humanity,"²³ while the Orthodox Church has since 1995

21. McDonagh, *Dying for Water* 102. In addition, see Mark Allman, "Theology H2O," in *Green Discipleship: Catholic Theological Ethics and the Environment*, ed. Tobias Winright (Winona, MN: Anselm Academic, 2011).

22. John Hart, *Sacramental Commons: Christian Ecological Ethics* (Lanham: Rowman & Littlefield, 2006); Gary Chamberlain, *Troubled Waters: Religion, Ethics, and the Global Water Crisis* (Lanham: Rowman & Littlefield, 2007).

23. World Council of Churches, "Water of Life" (2006) 31, <https://www.oikoumene.org/en/resources/documents/wcc-programmes/justice-diakonia-and-responsibility-for-creation/climate-change-water/water-of-life-an-invitation-to-participate-the-ecumenical-water-network/@@download/file/water-of-life06.pdf>.

organized “Religion, Science, and the Environment” symposia on major bodies of water, and International Orthodox Christian Charities promotes relief projects focused on water provision, especially for refugees.²⁴ Regarding the right to water in particular, in interreligious perspective many different groups have resisted the idea that water should be used for profit at the expense of the poor and vulnerable: critiques of privatization and commodification of fresh water resources can be found in Islam, as well as in many indigenous frameworks of ecological-moral reflection.²⁵

In such a view, the idea of a human right to water benefits from, but does not require the endorsement of, the Catholic hierarchy. Similarly, the idea of a human right to water benefits from, but does not require, theological grounding, as evidenced by the fact that in 2010 the UN affirmed a fundamental human right to water.²⁶ This is an example of rhetorical-moral convergence that can help to frame important intersections of ecological and social well-being for international ethical-political agendas. The papal affirmation of the human right to water suggests that human rights language is valuable as it strives to make moral ideas universally accessible within a framework of international communication and action.

Four Fissures and Possibilities for Theorizing Normative Ecological Ethics in an Era of Pluralism

A hydrological hermeneutic of *Laudato Si'* can also cascade through several relatively uncharted areas for conceptual and methodological reflection in Catholic social ethics and moral theology. Four important sites of reconsideration include: human rights, development, and liberation; water in a global economy; natural law theory; and pluralism as a challenge for normativity.

Human Rights, Development, or Liberation?

Human rights paradigms have been celebrated as a universal moral language. But critics note that human rights frameworks are almost always based in Western philosophical assumptions and therefore tend to be highly individualistic and anthropocentric while omitting more-than-human entitlements.²⁷ Is the inherent anthropocentrism of human rights a problem? How far can or should the sphere of rights entitlements extend—for example, might other animals or ecosystems have rights (in this case, to

24. See www.rsesymposia.org.

25. Christine Gudorf, “Water Privatization in Christianity and Islam,” *Journal of the Society of Christian Ethics* 30 (2010); Naser I. Faruqui, Asit K. Biswas, and Murad J. Bino, eds., *Water Management in Islam* (Tokyo: United Nations University, 2001).

26. See Peppard, *Just Water*, chap. 3; see also UN-Water, http://www.un.org/waterforlifedecade/human_right_to_water.shtml.

27. The literature on this topic is significant. For a perspective informed by Catholic theology see, for example, Ramon Panikkar and Arvind Sharma, *Human Rights as a Western Concept* (New Delhi: D.K. Printworld, 2007).

the integrity of waters)? Oriol Miroso and Leila Harris suggest, for example, that the current formulation of the human right to water does not include emerging or prominent hydro-social challenges of “ecological needs for water; increasing water demand for energy generation, irrigation, or other [human] uses.”²⁸ 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 scholars trained in post-Enlightenment categories of moral value, but the idea that water is entitled to rights or that the earth has a right to clean water is not in fact so far afield. 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—imaged here as Mother—“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.” 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.”²⁹ So too did Pope Francis, in his address to the UN, invoke 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.

Yet even while recognizing such challenges, many scholars adopt a pragmatic position on the UN’s articulation of the human right to water. Miroso and Harris, for example, “see reason for critical reflection and caution regarding the [human right to water]” yet “nevertheless consider that its focus on goals related to water access and provision, attention to vulnerable populations, and equity concerns, and insistence on basic human needs, make it relevant and timely.”³⁰ In addition to philosophical queries about rights paradigms, there are also pragmatic considerations or objections to the mechanisms of their implementation. Most pressing in the case of water is how human rights paradigms intersect with the UN’s Sustainable Development Goals (SDGs), which were unanimously approved by member nations after Pope Francis’s September 2015 address to the UN.

The SDGs are the framework for the UN’s “2030 Agenda for Sustainable Development” and are meant to be oriented towards the tripartite goods of human well-being, environmental sustainability, and economic prosperity. Many development experts affirm the SDGs as a framework that is aligned with CST and goals of integral human development; economist Jeff Sachs has been a persistent evangelist

28. Oriol Miroso and Leila Harris, “Human Right to Water: Contemporary Challenges and Contours of a Global Debate,” *Antipode* 44 (August 2011) 932–49 at 935.

29. World People’s Conference on Climate Change, “Declaration of the Rights of Mother Earth” (2010) <https://pwccc.wordpress.com/programa>.

30. Miroso and Harris, “Human Right to Water” 933.

about the alignment of CST and the SDGs.³¹ Yet there are substantial issues to examine more closely. Of 17 total goals, SDG 6 expands a prior “focus on drinking water and basic sanitation to now cover the entire water cycle, including the management of water, wastewater and ecosystem resources. With water at the very core of sustainable development, SDG 6 does not only have strong linkages to all of the other SDGs, but also the ability to underpin them,” according to UN-Water.³² It is a positive sign that SDG 6 includes attention to gendered imbalances in the procurement of clean, fresh water and sanitation, yet does not foreground the language of human rights.³³ This gap is worth querying from the perspective of CST and *Laudato Si'*, for it stands to reason that the Catholic Church’s commitment to normative justice and the human right to water would include concern about modes of implementation of the SDGs. Pope Francis has clearly endorsed the importance of international mechanisms in general and the SDGs in particular, even while recognizing that they are imperfect (the “international juridical framework of the United Nations Organization and of all its activities, like any other human endeavor, can be improved, yet it remains necessary,” he said in his UN Address).³⁴ In the case of the right to water, this might be interpreted as suggesting that the imperfection of human institutions does not justify failure to act. Yet the lacuna of right-to-water language from the SDGs raises important questions, including the content of ultimate goals and the types of political economic relations that can best ensure their fulfillment. Perhaps long-standing moral commitments in CST—notably subsidiarity, participation, and the preferential option for the poor—could help to further specify prudent parameters.³⁵

In the decades-long mobilization of the notion of sustainable development, current forms of Western property paradigms and capitalistic mechanisms of economic exchange are seen as central to the process of achieving key goals of social and ecological flourishing as well as economic prosperity. This view holds that basic structures of economic globalization and capitalist exchange are viable as means towards the goals of social and ecological flourishing as well as economic prosperity. But it is important to note that not all interpreters of Catholic tradition align with mainstream views of sustainable development as framed by commitments to ongoing economic growth, which surely remains a target for mainstream economists and most politicians. Ecological economists along with many environmental and social ethicists are skeptical that Western property regimes and modes of economic exchange can

31. Jeffrey Sachs, “A Call to Virtue,” *America Magazine*, May 18, 2015, <http://americamagazine.org/issue/call-virtue>.

32. “Water in the 2030 Agenda for Sustainable Development,” UN-Water, <http://www.unwater.org/sdgs/en>.

33. See <http://www.un.org/sustainabledevelopment/water-and-sanitation> and <https://sustainabledevelopment.un.org/sdg6>.

34. Pope Francis, “Address of the Holy Father to the General Assembly of the United Nations Organization”.

35. See Meghan Clark, *The Vision of Catholic Social Thought: The Virtue of Solidarity and the Praxis of Human Rights* (Minneapolis: Fortress, 2014).

be sufficiently regulated to protect both people and the planet over time while also amplifying prosperity.³⁶ Trenchant analyses suggest that the logics of capitalist exchange entail problematic assumptions that lead to degradation of planet and “expulsions” of most of humanity from participating meaningfully in patterns of prosperity or governance.³⁷ Critics point to perverse incentives endemic to capitalist systems: the orientation toward infinite growth, for example, or the exploitation of natural goods (as well as human labor) as bases of capital production.

In other words, if structures of exclusion and oppression are built into the functioning of global economic development in late capitalist milieux, then “development” is not perhaps a sufficient goal. In this view, seeking to achieve dignity and protection for people and planet requires not merely concentrated action toward reform, but also recalibration and possibly rejection of the very assumptions embedded in “development,” even when qualified as “sustainable.” The issue is one of whether modest chastening and rehabilitation of current political economic systems will suffice to meet moral obligations (“development”), or whether structural reform is necessary (“liberation”). The debate resonates in substantial ways with critiques of political economy posed by liberation theologians in the mid-20th century and developed by contemporary exponents.

In his writings and speeches, Pope Francis seems to want to affirm the utility of the notion of “sustainable development” while also orienting it to the ultimate goals of liberation and human dignity. For example, in both *Evangelii Gaudium* and *Laudato Si’* (and in numerous memorable offhand remarks), Pope Francis seems to regard perversions of economic behavior and unjust structures as endemic to contemporary capitalist systems. He has affirmed that “unfettered capitalism” is problematic, which may imply that girding its excesses could be effective; but it could also imply that other political economic systems, if able to remediate social and environmental exclusions, may be more just. Is the church’s long-standing commitment to integral or authentic development well served by SDG paradigms that privilege development over more robust forms of liberation?

Water is one potential site for considering the ramifications of the question of development versus liberation. It is a particularly acute question when attuned to gender, for water-related injustices are foisted disproportionately upon the bodies and lives of people born female in many societies worldwide. Procuring fresh water can be burdensome or arduous, and in areas with insufficient infrastructure, women and girls are the ones who usually obtain it. Water and development expert Farhana Sultana and colleagues summarize that

36. The literature on these topics is enormous. See, for example, John Bellamy Foster, Richard Clark, and Brett York, *The Ecological Rift: Capitalism’s War on the Earth* (New York: Monthly Review, 2011).

37. Saskia Sassen, *Expulsions: Brutality and Complexity in the Global Economy* (Cambridge, MA: Harvard Belknap, 2014). See also Naomi Klein, *This Changes Everything: Capitalism vs. the Climate* (New York: Simon and Schuster, 2014).

impacts of water insecurity and injustices are clearly gendered, where women and girls in much of the global South spend countless hours fetching water for productive and reproductive needs. A gendered division of labor, as well as gendered livelihoods, wellbeing and burdens, are deeply affected by water quality, availability, provision systems and water policies.

In addition, “gender intersects with other axes of social difference (such as class, race, caste, dis/ability, etc.) whereby water crises can exacerbate socially constructed differences and power relations.”³⁸ Indeed, gender is now standardly recognized as a major factor in development by those who extol the economic benefits that accrue as a result of women’s equity in access to fresh water, sanitation, and related social goods such as education. While economic benefits are surely an important metric for contemporary development discourses, it is crucial to underscore in a fundamental way that the moral tenor of the issues surrounding gender and water ought not be reduced to the language of economic benefit. Here, development is no substitute for liberation; and whether development as framed in the SDGs is compatible with liberation remains to be seen.

It is some credit to Catholic teaching that intersections between women and water have been briefly acknowledged in occasional papal pronouncements (for example, Pope Francis’s 2015 address to the UN linked the right to water to the spiritual imperative of education for girls). But there is much more to be said, for on the one hand available treatments of gender and water are very brief; and on the other hand, it is not clear that classical notions of gender complementarity and feminine aptitudes so consistently extolled by the church are in fact sufficient to upend global patterns by which women are burdened with water’s weight.³⁹ Here, the work of liberationist-feminist scholars such as Ivone Gebara, and the insights of many other feminist approaches to water, human bodies, social relations, ecology, and environmental justice deserve amplified attention in relation to theological anthropology and normative commitments.

Water in a Global Economy: Beyond Rights and Commodities

Governments and global institutions are also very interested in the subject and substance of fresh water. The World Economic Forum in January 2015 announced that water scarcity is among the top three threats to long-term economic security, and corporate interests continue to demonstrate that the commodification, privatization, and financialization of fresh water is an extremely alluring investment opportunity.⁴⁰ So too have various

38. Farhana Sultana and Alex Loftus, eds., *The Right to Water: Politics, Governance, and Social Struggle* (London: Earthscan, 2012) 8.

39. For example: John Paul II, *Mulieris Dignitatem*, (August 15, 1988), http://w2.vatican.va/content/john-paul-ii/en/apost_letters/1988/documents/hf_jp-ii_apl_19880815_mulieris-dignitatem.html.

40. Carl Ganter, “Water crises are a top global risk,” *World Economic Forum*, January 16, 2015, <http://www.weforum.org/agenda/2015/01/why-world-water-crises-are-a-top-global-risk>.

vested interests argued that the private sector is in fact the most promising way to ensure the attainment of the right to water.⁴¹ How does this development intersect with *Laudato Si'* and its depiction of the confluence between hydrology and theology?

Across the documentary tradition and throughout *Laudato Si'*, the assertion of fresh water as a human right is usually accompanied by a critique of commodification, which in turn seems generally meant to forestall any approach that would withhold access to water for people based on ability to pay. (It also reflects a long-standing conviction in modern CST that the privilege of the few is not to be maintained at the expense of the many.) Thus Pope Francis critiques the “tendency towards privatization” and rendering of water “subject to the laws of the market,” then immediately asserts as a counterpoint that, “access to safe water is a universal and fundamental human right,” such that “our world has a grave social debt toward the poor who lack drinking water, because they are denied a right to life consistent with their inalienable dignity” (LS 30). The message is clear: fresh water is a human right, not a commodity, and markets are not sufficiently attentive to fundamental obligations stemming from human dignity.

It stands to reason that these formulations are predicated upon an assumption that something cannot simultaneously be treated as both a human right and an economic commodity.⁴² Such a framing is understandable, since for several decades spanning the turn of the 21st century, a debate raged in global forums about whether water was best considered to be an economic commodity or as a human right. And while the UN designation of the human right to water in 2010 was viewed by many commentators and advocates as a decisive moment for that particular debate, scholars point out that the articulation and affirmation of a human right to water does not necessarily forestall the commodification or privatization of water in an era of “neoliberalized water governance.”⁴³ To be sure, the moral tenor of the right to water may put pressure on corporations or governments to attune their arrangements to questions of access for the least privileged; but it does not *prima facie* rule out practices of commodification, privatization, and monetization of water and water-related services. In fact, “ironically, the ability to provide or achieve the human right is often claimed to be delivered best by the private sector.”⁴⁴

The articulation of the human right to water advances moral claims but does not, on its own steam, forestall all market practices or ensure the implementation of normative commitments to justice. Instead, real questions remain about the paradigms within which water is regarded. Is the church’s exhortation regarding fresh water as a human right

41. The World Bank, “FAQ—World Bank Group Support for Water and Sanitation Systems” (January 7, 2014) <http://www.worldbank.org/en/topic/water/brief/working-with-public-private-sectors-to-increase-water-sanitation-access>.

42. See Peppard, *Just Water* chap. 3.

43. Karen Bakker, “The ‘Commons’ versus the ‘Commodity’: Alter-Globalization, Anti-Privatization and the Human Right to Water in the Global South,” *Antipode* 39 (2007) 431–55.

44. Jeremy Schmidt and Christiana Peppard, “Water Ethics on a Human-Dominated Planet: Rationality, Context, and Values in Global Governance,” *Wiley Interdisciplinary Reviews: Water* (2014) 533–47 at 538.

meant to exclude certain formulations of private property or practices of commodification? How do these assertions intersect with broader notions, such as the common good or the social mortgage on private property? (Some legal scholars have advanced parallel notions of water as a public trust.) Even with the view that water is a human right, important normative questions persist about what kind of thing water is, as well as how it ought to be protected, managed, and distributed for the common good in an era of planetary degradation and global exclusions. Normative frameworks for fresh water deserve further systematization, analysis, and constructive critique. As a starting point, it is time to move beyond the historically significant—but now somewhat dated—binary of rights-versus-commodities. Further specification is desperately needed.

What can be said most authoritatively about the language of the right to water and critiques of commodification in CST is that magisterial concern about fresh water is linked to concern for people living in situations of poverty and water-related suffering.⁴⁵ In this sense, perhaps what water experts Mirosa and Harris point out about the UN-based human right to water is also apt with regard to the Catholic Church: it is “somewhat agnostic with regard to water provision and who is responsible for it, [but] it is abundantly clear with respect to its goal orientation.”⁴⁶ The bottom line is teleological and aspirational: that everyone who needs clean, fresh water has enough for a meaningful life, in keeping with her or his inherent human dignity.

A Hydrological Hermeneutic for Natural Law Theories

Scholars can also inquire what a hydrological hermeneutic may suggest with regard to natural law theory. It seems fair to suggest that all human beings know intuitively, if pre-analytically, that water is universally necessary for survival and flourishing. Yet Western scholars should also be careful to ensure that interpretations of universality in this sense do not lapse into hegemonic assumptions of uniformity. Water is rarely “uniform”: it is experienced culturally and geographically, mediated by particular places and histories, political economies, institutional arrangements, and social frameworks. In other words, water is a socio-natural substance, a material reality mediated by multiple cultural and social constructions.

Geographer Jamie Linton has pointed out that there is a powerful dialectic between how societies and individuals define and understand water, and the kinds of uses towards which water is directed and the kinds of relations it is encouraged or allowed to sustain.⁴⁷ Jeremy Schmidt specifies more precisely that 20th-century conceptions of

45. Addressing the residents of Kangemi Slum in Nairobi, Kenya in fall 2015, Francis remarked, “To deny a family water, under any bureaucratic pretext whatsoever, is a great injustice, especially when one profits from this need.” “Address of His Holiness Pope Francis to Kangemi Slum,” (November 7, 2015), http://w2.vatican.va/content/francesco/en/speeches/2015/november/documents/papa-francesco_20151127_kenya-kangemi.html.

46. Mirosa and Harris, “Human Right to Water” 935.

47. Jamie Linton, *What is Water? The History of a Modern Abstraction* (Vancouver: University of British Columbia, 2010).

water—driven by intersecting knowledge regimes of political frameworks and industrial-economic production—have generated a contemporary milieu in which societies now consider water to be primarily an economic resource.⁴⁸ Such formulations carry weight: Schmidt and others have argued compellingly that these particular, historically contingent interpretations of water have been naturalized and universalized, ensuring that these interpretations—and subsequent regulations for licit uses—are considered to be objective, or even self-evident.⁴⁹ And, to be sure, water has a molecular signature and predictable observable properties governed by laws of nature. But the fact that water is H₂O and changes phases under certain arrangements of temperature and pressure neither trumps nor precludes its meanings, symbolisms, and socially mediated relationships in a range of cultural formulations; nor does it directly dictate how waters should be regarded, managed, traded, protected, valued, or engaged.

To suggest that socio-natural realities are complex subjects for natural law theory is not to say that scholars should give up on the idea of natural law methodology or universal morality. Rather, the point is that to think with contemporary natural science and social science about socio-natural realities (such as water) requires bringing the resources of a variety of disciplines—including environmental philosophy and ecological theory—into ongoing, contemporary epistemic analysis and moral theorizing about Catholic natural law theory. There is some important precedent here: interdisciplinary analyses have been and continue to be put forward by scholars interested in the plausibility of natural law theory in light of the contemporary sciences as well as epistemological critiques.⁵⁰ For all of these topics, hard questions must be asked about normativity, not just for water but also for intersecting categories such as ecology and gender. For example: How does “ecology” as a term function in light of particular perceptions of “human ecology” (as developed by John Paul II and Benedict XVI) and “natural or environmental ecology” (as signaled by Benedict XVI in *Caritas in Veritate*, and developed further by Francis)? How do these in turn reflect or contradict consensus in contemporary natural and social sciences, environmental history and philosophy, and ecological theory? How do notions of gendered, embodied reality undergird Catholic magisterial assertions of ecological and social flourishing, and what implications might these bear for the ways that water and power flow?

Natural law theory as it informs magisterial Catholic moral methodologies may well be somewhat supple when it comes to the topic of environmental goods such as water, but the same is not necessarily true for implicit assumptions about the category of ecology (compelling and productive though the trope of “integral ecology” currently seems

48. See Jeremy J. Schmidt, *Water in the Anthropocene: Conservation, Development, and the Globalization of American Natural Resource Management* (New York: New York University, forthcoming).

49. This kind of analysis is one way that the human rights paradigm has been critiqued (see the previous section’s discussion of the human right to water).

50. See, for example, Stephen J. Pope, “Scientific and Natural Law Analyses of Homosexuality: A Methodological Study,” *Journal of Religious Ethics* 25 (1997) 89–126; Celia Deane-Drummond, “Plumbing the Depths: A Recovery of Natural Law and Natural Wisdom in the Context of Debates about Evolutionary Purpose,” *Zygon* 42 (2007) 981–97.

to be), and it is certainly not true of the Catholic Church's official stance on gender. These kinds of complex, socio-natural phenomena as understood and experienced around the world far exceed Western understandings and descriptive/prescriptive categories. And how multiple, fluid socio-natural realities are parsed is a significant growing edge for Catholic social ethics and moral theology, within and beyond *Laudato Si'*. Cross-cultural studies and value systems suggest radically diverse notions of water, agency, and moral significations throughout histories, cultures, and geographies. And in a pluralistic age, diverse understandings and regulative ideals regarding water cannot be easily dismissed as errant understandings of a reality for which Western epistemologies, theologies, or experiences have the clearest, primary, exclusionary access to truth. Perhaps surprisingly, intimations of this are even found in *Laudato Si'*.⁵¹

Pluralism and the Challenge of Normativity

How do cultural pluralism and moral multiplicity appear in *Laudato Si'*, and with what significance? In one sense, *Laudato Si'* maintains an utterly clear normative, Christian theological and ethical focus. Many parts of the encyclical are wedded tightly to Christocentric understandings of reality, scriptural interpretation, and prior church teachings. Yet there are also indications that religious and cultural diversity are welcome in ethical reasoning on ecological matters. In the footnotes, for example, Pope Francis draws upon standard references to papal precedent and Scripture, while also evidencing an impressive decentralizing tendency to cite regional bishops' conferences and non-Catholic sources that range from statements by Orthodox Patriarch Bartholomew to a 9th-century Sufi mystic and the 20th-century Earth Charter. So too does *Laudato Si'* explicitly seek "a conversation that includes everyone" in pursuit of a "new and universal solidarity" (LS 14). On the question of pluralism, perhaps the most telling case to examine is Francis's treatment of indigenous ecological and cultural knowledge.

In *Laudato Si'*, Francis compares cultural elimination to species extinction: "The disappearance of a culture can be just as serious, or even more serious, than the disappearance of a species of plant or animal" (LS 145). In addition, it is possible to discern in *Laudato Si'* an emphasis on the importance of indigenous sovereignty and self-determination, including cultural frames for understanding, valuing, and managing entities, presumably including water. For example: "It is essential," writes Francis, "to show special care for indigenous communities and their cultural traditions. They are not merely one minority among others, but should be the principal dialogue partners, especially when large projects affecting their land are proposed" (LS 146). As Bill McKibben put it in the *New York Review of Books*, such admiration for cultural diversity and indigenous knowledge is remarkable coming from the leader of an institution that "first set out to universalize the world."⁵²

51. See LS 145, 146, 179 (discussed below).

52. Bill McKibben, "The Pope and the Planet," *New York Review of Books* (August 13, 2015) <http://www.nybooks.com/articles/2015/08/13/pope-and-planet>.

Diverse epistemic patterns, metaphysical constructions, and ecological practices are far from inert ideas. Throughout the twentieth and now twenty-first centuries, many non-dominant cultures and indigenous action groups have challenged the values embedded in Western forms of development-incentivized resource management, especially pertaining to water.⁵³ These are important interlocutors with practical implications for dominant forms of property regimes, governance structures, and economic practices. One upshot is that for scholars in Western contexts of privilege and global domination, variegated ways of life and knowledge traditions must be regarded with humility—that is, as conversation partners and potential sources of deep knowledge from which our dominant value systems and environmental-social practices have much to learn. This is particularly true given legacies of colonialism and domination.⁵⁴

Granted, in *Laudato Si'* Francis does not explicitly consider what indigenous cultures may offer to ethical discourse on water. But the epistemic point stands: the pope's recognition of indigenous traditions may signal a willingness to consider how there are important, multiple ways of being and understanding constitutive relationships that can enrich, challenge, and construct countervailing accounts to the historical, industrial, Western political economic forces that have shaped patterns of relationship and exchange worldwide. It is possible to read in *Laudato Si'* not just a decrying of the "technocratic paradigm" but also a constructive gesture towards epistemological expansion that is new to papal teaching. Might it be the case that diverse epistemologies, metaphysics, and ethical paradigms contain seeds that—if planted in the soil of a dialogue that truly "includes everyone"—may blossom into fuller, cross-pollinated understandings of ecological reality? And could this happen in a context of planetary ecological and social degradation?

Granted, some people may worry that the church's turn to non-theological formulations—such as the language of rights or the particularities of hydro-social contexts and indigenous knowledge—could represent an abnegation of enduring theological dogma, or a fleeting and myopic focus on contingent, this-worldly matters. Such a mutually exclusive dualism is unnecessarily reductionist. Not all new epistemologies are opposed to what has come before, nor is the inclusion of multiple ways of framing reality equivalent to epistemic or moral relativism. Surely there are questions to be asked about normative commitments in pluralistic eras, but to ask such questions and to explore possibilities for pluralistic moral theorizing is not tantamount to greasing a slide into ethical relativism.

Instead, to recognize that water is a socio-natural liquid is to accept that many meanings and interpretations of its ethical significance are linked to particular cultural epistemologies, most of which have not been affirmed in Western discourse. The pope's recognition of the importance of indigenous cultures and ecological knowledge, coupled with his apologies for the church's colonial history expressed during his

53. See, for example, www.culturalsurvival.org.

54. Pope Francis made this point in his address to social movements in Bolivia in summer 2015. See "Address of the Holy Father to the Second World Meeting of Popular Movements," (July 9, 2015), http://w2.vatican.va/content/francesco/en/speeches/2015/july/documents/papa-francesco_20150709_bolivia-movimenti-popolari.html.

2015 trip to South America, seem to advance the possibility of an epistemological opening. Such an opening could include, of course, a willingness to consider depictions (both descriptive and normative) of what kind of thing water is understood to be and what kinds of relations it is allowed to sustain.

Conclusion

I have offered here a hydrological hermeneutic of *Laudato Si'*, and have argued that fresh water stands as a case in point of how current scientific consensus informs this pope's moral reflection on matters ecological. *Laudato Si'* demonstrates ongoing papal commitments to the human right to water. Most constructively, four areas in social ethics and moral theology have been shown to be both illuminated and challenged by a hydrological hermeneutic of *Laudato Si'* when the encyclical is placed in conversation with the natural sciences, social sciences, environmental philosophy, and ecological theory. In each area there are possibilities for defending substantial normative commitments while also recognizing methodological and normative fissures in an age of pluralism, social exclusions, and environmental degradations.

Fresh water is a substance upon which choices and moralities, cultures and mortalities are constantly being made. The patterns of interpretation and relationship that individuals and societies adopt with regard to fresh water will determine the shape of human lives, other lives, and ecosystems in the 21st century, and so the moral visions of fresh water and ecology put forward by Pope Francis in *Laudato Si'* are important sites for reflection. The particular wager of this article has been that a hydrological hermeneutic can help to illuminate specific methods and themes from the encyclical, while also prompting new ways of proceeding with the task of ethics in an era of pluralism, planetary degradations, social exclusions, and embodied burdens. More broadly, fresh water is one topic and substance that can prompt denizens of multiple, conceptual worlds towards ongoing moral, social, and ecological conversion on the vital goods of common existence. It is in these complex confluences that hydrology is most likely to meet theology, productively, as a result of *Laudato Si'*.

Author biography

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