

Techno-Science, Integral Thought, and the Reality of Limits in Laudato Si'

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Article abstract

"Reality" is a term that appears dozens of times in Pope Francis's *Laudato Si'*. The term is not directly defined, but appears to signal for Francis a mysterious, relational, created order that imposes limits on humans while also evoking positive feelings like wonder and peace. Francis contrasts this vision of reality with perspectives on the world that are human-centered, fragmented, or reductionist. In this way, his account of reality grounds his sharp critique of narrow, techno-scientific perspectives on life and the world that entail a will to mastery and control. Francis's critique of reductive, fragmentary perspectives is also connected to his concern with a category of humans and nonhuman others whom Francis designates "the excluded" in *Laudato Si'*. Distorted views of reality perpetuate neglect of these excluded others and prevent us from grasping the integral functioning of human, ecological, and social realms. I conclude by contrasting Francis's version of integral ecology with other forms of integral thought that express naïve enthusiasm for technology, and suggest a denial of human and natural limits.

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Techno-Science, Integral Thought, and the Reality of Limits in *Laudato Si'*

Lisa H. Sideris

Introduction

In his ecological encyclical *Laudato Si'*, Pope Francis characterizes his task as getting “to the roots of the present situation, so as to consider not only its symptoms but also its deepest causes”¹ (§15). Francis articulates and defends an “adequate anthropology” and a proper vision of “reality” that effectively grounds - as well as limits - all human endeavors. In particular, his quest to locate the root causes of our present environmental and social crises engages him in a critique of a totalizing “technocratic paradigm” that stands in opposition to what Francis considers genuine reality in all its complexity and tangibility. The false reality of the technocratic paradigm encourages delusional forms of anthropocentrism and instrumentalization of others. It obscures the rights and needs of human and nonhuman others whom Francis repeatedly refers to as “the excluded.” Francis’s call to resist the homogenizing and totalizing impulse of both globalization and what I will call “techno-science” brings into sharper focus the plight of these excluded human and nonhuman others.

In short, *Laudato Si'* calls for a shift in perspective from false to genuine reality, a move that enables us to see all relationships as moral relationships, and ourselves as finite beings. But what is this reality to which Francis alludes so frequently, and how do humans access it? For the most part, Francis’s argument for the need to orient ourselves to reality is issued in an indirect fashion, but it is clear that reality stands in opposition to reductive, fragmented, highly specialized, and ideological distortions of the world around us. In what follows, I seek to make clearer the connections between Francis’s critique of the technocratic paradigm - or what I call techno-science - and his larger moral framework as glimpsed in his repeated but somewhat elusive invocation of reality in *Laudato Si'*. In the course of analyzing Francis’s integral ecology, I present a brief but, I hope, illuminating contrast with forms of integral thought that suggests a rather different take on reality, the status of “the excluded,” the necessity of limits, and even the urgency of the climate crisis. While I offer these interpretations of *Laudato Si'* as someone who stands outside the Catholic tradition, I believe Francis’s voice is a necessary and important one, especially when compared with some competing forms of integral thought emerging today.

¹Pope Francis, *Laudato Si'* (Vatican City: Vatican Press, 2015).

Critique of Science and Technology in *Laudato Si'*

Laudato Si' is an impressive achievement by any measure. The pope addresses a wide range of social, scientific, and environmental issues in a learned manner, while giving particular attention to climate change, environmental and social justice, the global economy, the cult of consumerism, and uncritical devotion to technological progress. He offers informed perspectives on such diverse topics as urban design, aesthetics, our modern addiction to the internet and social media, and the importance of cultivating a sense of place. Throughout these discussions, Francis places repeated emphasis on “reality,” a word that, on my count, appears over forty times in the encyclical. Francis’s recurring attention to reality is what drew my attention most when I initially encountered the encyclical, particularly his contrast between reality and anthropocentric modes of being, but also his apparent suggestion that reality has a fundamentally mysterious quality.²

With regard to Francis’s affinity for a certain style of nature mysticism, much has been made of his decision to adopt St. Francis as his namesake, a thirteenth-century Italian friar who preached to birds, addressed humble creatures as brothers and sisters, and the Earth as mother. Canadian journalist and climate activist Naomi Klein, who was invited to speak at the Vatican following the release of *Laudato Si'*, hints that a mystical, quasi-animistic quality inflects the Argentinian pope’s theology. “In large parts of the global south, the more anti-nature elements of Christian doctrine never entirely took hold,” she notes. “Particularly in Latin America, with its large indigenous populations, Catholicism wasn’t able to fully displace cosmologies that centered on a living and sacred Earth.”³ *Laudato Si'*, she suggests, embodies a fusion of Catholic and indigenous cosmologies. Conversations at the Vatican that Klein witnessed firsthand, however, point to some of the obstacles an overtly animistic pope would likely encounter - stern warnings that the tradition does not worship nature, that humans are no mere animal, and that God remains sovereign over nature.

Concerns about provoking such objections from guardians of the tradition may have something to do with Francis’s somewhat circumlocutory approach to defining a reality that he clearly reveres. He is careful not to identify this mysterious, sacred reality wholly with nature, though

²I will not pursue it here, but what intrigues me about these features of the pope’s argument are (general but not entirely superficial) parallels with conceptions of reality, mystery, wonder, and humility and critique of human hubris that I find in the work of Rachel Carson. In a sense, Carson’s account of nature, ethics, and wonder is a somewhat more secular and Protestant-influenced version of Francis’s theological treatment of creation and reality.

³Naomi Klein, “A Radical Vatican?” *The New Yorker*, July 10, 2015, <https://www.newyorker.com/news/news-desk/a-visit-to-the-vatican>.

passages of *Laudato Si'* indicate that nature and its processes play an indispensable role in orienting humans toward reality. Francis proceeds in a somewhat apophatic fashion, defining reality by negation and in contrast to the false, distorted forms of reality that humans construct and struggle to maintain. Anthropocentrism - a condition in which humans "no longer recognize any higher instance than ourselves, when we see nothing but ourselves" - is the most pronounced symptom of a false perception of reality (§6). Human efforts to "transform reality" in ways that ignore our fundamental, relational anthropology give rise to a whole host of environmental and societal ills. Tyrannical anthropocentrism instrumentalizes human and nonhuman others and perpetuates the narrow vision of the technocratic paradigm.

Francis's account of the technocratic paradigm aligns with my somewhat pejorative use in this essay of the term techno-science.⁴ While in science and technology studies, the term techno-science often serves to highlight the technological and social context of science, I intend the term to designate a global intertwinement of science and technology that is impacting and transforming human life and well-being, and the natural environment, in ways that often produce or increase harm. In this sense, it is often associated with and encourages an image of the human as *homo faber*, a world-making, Promethean creature. Particularly in its neoliberal context, techno-science exhibits a fundamentally acquisitive character, a will to mastery and control. It does not seek merely to test hypotheses and evaluate evidence, but is driven toward creation and production. The techno-scientific worldview promotes the transgression of limits, and regards constraints as an opportunity for further innovation, expansion, or intensification of its techniques and practices.⁵ In this sense, techno-science, like the technocratic paradigm decried by Francis, is something to be resisted, particularly by those concerned with the fate of the natural environment.

Francis's concerns about techno-science are scattered throughout the encyclical but appear in their most emphatic and succinct form in Chapter Three, "The Human Roots of the Ecological Crisis." Perhaps intentionally, the chapter title calls to mind Lynn White's landmark essay, "The Historical Roots of Our Ecologic Crisis,"⁶ and Francis can be read as responding (though not by name) to White's controversial charge that a human-centered Christian dogma of creation is to

⁴Francis only refers to techno-science by name once in the encyclical, whereas the technocratic paradigm comes under fire frequently. When he does refer to techno-science by name, his account is even-handed, describing it as having potential, when well-directed, to bring about improvements. Not so his account of the technocratic paradigm.

⁵Here I draw on elements of Alfred Nordmann, Bernadette Bensaude Vincent, Sacha Loeve, and Astrid Schwarz, "Science vs Technoscience - A Primer." See under Research at <http://www.philosophie.tu-darmstadt.de/nordmann>.

⁶Lynn White, "The Historical Roots of Our Ecologic Crisis," *Science* 155, no. 3767 (March 10, 1967): 1203.

blame for neglect of nature. “An inadequate presentation of Christian anthropology gave rise to a wrong understanding of the relationship between human beings and the world,” Francis argues, fueling a “Promethean vision of mastery” rather than “responsible stewardship” (§116). In stressing the *human* roots of the ecological crisis, Francis is denying that values inherent within Christianity drive the Promethean agenda. Rather, the impulse to mastery is symptomatic of a mode of being that humans have constructed and perpetuated, apart from Christian teaching. Indeed, the position of *Laudato Si’* is that Christian teaching directly *challenges* the dominionistic orientation, insofar as the will to mastery springs from denial of the relational character of reality. Francis’s claim that this impulse has no place in Christian teaching is of course debatable, and I will return to the topic of the encyclical’s anthropocentric aspects later.⁷

On the whole, *Laudato Si’* does an admirable job of summing up current science in relation to the environmental crisis, while also issuing a withering critique of scientism and an “irrational confidence in progress and human abilities” (§19). Francis’s sometimes sharply negative appraisal of techno-science may surprise some readers, given widespread anticipation by the media and the academy of the encyclical as a “climate” document and the praise it has garnered from journalists and scholars - including scientists - for its “watertight” presentation of facts.⁸ As important as science is for Francis’s arguments, however, science is not the same thing as reality in *Laudato Si’*.

That said, Francis relies heavily on current scientific findings in making the case for climate change and its current and future impacts. He likewise appears familiar with the basics of ecosystem services, and he pronounces on issues related to genetically modified organisms, the role of mangrove swamps in protecting coastal areas, and the importance of biological corridors that allow animals to migrate. Admittedly, his treatment of evolutionary science is brief and somewhat opaque. As Celia Deane-Drummond notes, Francis’s remarks referencing the “direct action”⁹ of God in human evolution are “tantalizingly unclear.”¹⁰ He denies that evolutionary theory captures what is unique about the human person - a certain transcendent quality of subjecthood, a capacity of *thou*-ness in relation to the Thou of God - but does not

⁷Celia Deane-Drummond notes that Francis “oversimplifies his case by associating [anthropocentrism] with science and modernity rather than Christianity.” “*Laudato Si’* and the Natural Sciences: Assessment of Possibilities and Limits,” *Theological Studies* 77, no. 2 (June 2016): 402.

⁸Inés San Martín, “Expert Calls the Science behind the Papal Encyclical ‘Watertight,’” *Crux*, June 18, 2015, <https://cruxnow.com/church/2015/06/18/expert-calls-the-science-behind-the-papal-encyclical-watertight>.

⁹Deane-Drummond, “*Laudato Si’* and the Natural Sciences,” 398.

¹⁰Ibid.

promote a creationist or intelligent design position.¹¹ For Francis, this divine calling forth of the human is, in Deane-Drummond's words, something that "science can never properly address."¹² Elsewhere, the pope advances a similar claim about living beings as a whole, not just humans, insisting that "it cannot be maintained that empirical science provides a complete explanation of life, the interplay of all creatures and the whole of reality" (§ 199). For science to do so "would be to breach the limits imposed by its own methodology" (§ 199). While Francis's treatment of evolutionary science is in some ways unsatisfying, his claim that humanness is inseparable from being called into relationship is wholly consistent with the vision of *Laudato Si'* that reality is fundamentally relational.

Technology and Moral Progress

Francis freely, if briefly, acknowledges the benefits of "well directed" techno-science (§103) that improves quality of life through agriculture or efficient transportation, or that beautifies the world in the form of thoughtfully designed buildings and public spaces, as well as art and music. However, a misguided anthropocentrism exalts "technical thought over reality" in ways that, paradoxically, cause humans to "misunderstand themselves and end up acting against themselves" (§ 115). Francis frequently cites Catholic priest and scholar Romano Guardini, whose views on technology were influenced, in turn, by Heidegger. Scholars have also documented Francis's debt to liberation theologian Leonardo Boff, who likewise draws inspiration from Heidegger's analysis of techno-science.¹³ Boff, for example, commends Heidegger for recognizing the enframing power of technology: "techno-science has created a mechanism in us (Gestell), a way of seeing that considers everything as an item at our disposal."¹⁴ Thus, Francis also, in language reminiscent of Heidegger's key concept of nature viewed as a standing reserve,¹⁵ characterizes the technological mindset as one that enframes nature as lifeless, bloodless facts or raw material waiting to be shaped to human ends.

It is significant that passages from the encyclical that express this Heideggerian critique also make frequent reference to reality. Quoting Guardini, Francis decries the technological mindset

¹¹For more on Francis's treatment of evolution, see Deane-Drummond, "Laudato Si' and the Natural Sciences."

¹²Ibid.

¹³Clive Hamilton, "The Sacrament of Creation: What Can We Expect from Pope Francis's Ecological Encyclical?" *ABC Religion and Ethics*, March 4, 2015, <http://www.abc.net.au/religion/articles/2015/03/03/4190521.htm>.

¹⁴Leonardo Boff, "Only God Can Save Us," *LeonardoBoff.com*, January 6, 2013, <https://leonardoboff.wordpress.com/2013/06/01/only-a-god-can-save-us-2>.

¹⁵Martin Heidegger, *The Question Concerning Technology and Other Essays* (New York: Garland Publishing, 1977).

that “sees nature as insensate order ... as a mere given, as an object of utility” (§115). Adopting a somewhat romantic tone, he claims that nature once suggested to humans its own possibilities, on its own terms. Humans have always intervened in nature, he concedes, but past interventions were more “in tune with” and respectful of nature’s autonomy, limits, and possibilities. “Now, by contrast, we are the ones to lay our hands on things, attempting to extract everything possible from them while frequently ignoring or forgetting the reality in front of us” (§106). The technocratic paradigm perpetuates a cycle of antagonism between humans and nature, in ways that ultimately harm both. Technology creates an impression of limitlessness, but also an anxious need to test and affirm our power again and again. Caught up in the inherent logic of the technocratic paradigm, we can only test our limits “by transgressing the present limits of possibility,” as Michael Hanby argues in his commentary on *Laudato Si’*.¹⁶ Technocracy’s investment in the belief that what *can* be done *must* be done “commits us to a perpetual war against the limitations of nature.”¹⁷ This confrontational attitude prevents us from examining the central “lie,” as Francis calls it, of Earth’s limitless bounty (§106).

Increases in human power made possible by techno-science do not amount to genuine progress, Francis warns, because raw power outstrips the development of moral responsibility and conscience. Failing to advance morally, we are rendered supremely vulnerable to our own and others’ self-interested and violent impulses. Here again, Francis stresses the paradoxical way in which human-centered technocratic development ultimately inflicts self-harm. “We stand naked and exposed in the face of our ever-increasing power, lacking the wherewithal to control it” (§105). Technology divorced from ethics sees all practices as licit and virtually nothing as forbidden (§136). Ultimately, we “end up worshipping earthly powers ... usurping the place of God.” In the absence of a spirituality that understands God as the sole creator of the world, “human beings will always try to impose their own laws and interests on reality” (§75). Loss of humility and enchantment with “the possibility of limitless mastery over everything” harms humans and the environment in tandem (§224). Under the heading of “The Globalization of the Technocratic Paradigm,” and in the context of critiquing a false, human-centered reality, Francis suggests that a scientific or “experimental” method already contains *within itself* “a technique of possession, mastery and transformation” (§107). This inherent tendency toward mastery is intensified by an “undifferentiated” and “one-dimensional” account of reality. Science, within this totalizing technocratic paradigm, ceases to be mere method or tool and becomes a homogenizing worldview imposed on reality as a whole (§107). Francis offers up the common refrain of *Laudato Si’* in calling for “renewed attention to reality

¹⁶Michael Hanby, “The Gospel of Creation and the Technocratic Paradigm: Reflections on a Central Teaching in *Laudato Si’*,” *Communio* 42, no. 4 (Winter 2015): 733.

¹⁷Ibid.

and the limits it imposes” (§116).

Francis’s account of the technocratic paradigm implies that even when well directed, there remains the “imperative of control ... inherent in the structure of scientific cognition and experimental rationality,” as Hanby argues.¹⁸ This may strike some as a fairly radical claim. As I will explain more fully near the conclusion of this essay, this claim also distinguishes Francis’s version of integral ecology from other varieties of integral thought that enthusiastically embrace technology and cast doubt on the reality of limits. This strain of integral ecology, which has roots in a comprehensive theory-of-everything proposed by Ken Wilbur and devotees of his work, regards Heideggerian or deep ecological sentiments with some suspicion and understands technology to propel cultural evolution in largely positive new directions.

The Givenness of Integral Reality

To sum up some claims so far: Reality as Francis construes it, offers the possibility of embracing our limits, instilling humility and self-restraint rather than feeding a confrontational dynamic between humans and nature (§105). But we still have not landed on a precise definition of this reality that serves as antidote to so many modern ills. As I have noted, Francis tends to gesture toward the signs of reality-denial rather than provide a clear account of reality. Proceeding in this fashion, he suggests the integral character of reality by pointing to harmful practices - both environmental and social - that ignore it.

A false perception shuts out the profound interconnectedness within and between natural and social worlds. These connections are at the heart of what Francis means by integral ecology. Francis defines integral ecology as a vision that takes into account all aspects of the global crisis, including social, economic, and environmental dimensions (§137). Prior to Francis’s encyclical, the Catholic tradition gestured toward integral thought in a variety of contexts, notably in the concept of “integral development” alluded to in the writings by Pope Benedict XVI and Pope Paul VI, and in Pope John Paul II’s invocation of a “human ecology” that is grounded in the family and society. These integral perspectives often stressed the authentic development of the *whole* person, and the interrelatedness of economic, financial, cultural, familial, and religious dimensions of life. Going further back, Celia Deane-Drummond notes, “there may be an echo of Jacques Maritain’s concept of integral humanism developed in the 1940s, which places priority on human value in the social and economic sphere, including ‘natural’ dimensions.”¹⁹ This

¹⁸Ibid., 729.

¹⁹Celia Deane-Drummond, “Living Narratives: Defiant Earth or Integral Ecology in the Epoch of Humans?” *Heythrop Journal* (Forthcoming).

appreciation for wholeness, holism, and relationality is carried forward by Francis, who is fond of saying that the verb “to integrate” is “a verb very dear to me.”²⁰ The “very concept of person, born and matured in Christianity, helps in the pursuit of a fully human development,” Francis argues, “because ‘person’ means *relation*, not individualism; it affirms *inclusion* not exclusion ...”²¹ As regards the natural environment, Francis’s integral approach entails that a search for discrete answers to discrete problems is no longer tenable. “We are faced not with two separate crises, one environmental and the other social, but rather with one complex crisis which is both social and environmental” (§139). Responses to this complex crisis must be integrated in ways that restore both the natural world and the dignity of those whom Francis calls the excluded (§139).

Francis’s integral ecology thus gives us one way of grasping what he means by reality (i.e., it has interrelated dimensions) yet the term is invoked so often and in so many contexts that its meaning remains difficult to pin down. Some of his remarks could be taken to suggest that reality has a largely punitive function, disciplining us and deflating our self-importance, or exposing our frailty and impaired autonomy. None of this sounds particularly motivating as a way of bringing humans closer to what Francis lovingly calls our common home. Other passages, as I noted previously, might be taken to suggest that reality essentially *is* nature or natural processes. For example, when elaborating on the vital functions of ecosystems, Francis laments that we ignore nature’s role in controlling disease, enriching soil, or purifying water. In disregarding these values, we essentially deny that “we live and act on the basis of a *reality* which has previously been given to us, which precedes our existence and our abilities” (§140, emphasis added). Natural systems themselves, however, are not so much consonant with reality as they are a tangible *sign*, an intimation of a greater reality that includes but also exceeds nature itself, I would argue. Put differently, it is the givenness of this reality that Francis stresses over and above its particular manifestation *in* or *as* nature. Givenness here carries a meaning quite opposite to the ‘*mere*’ givenness of instrumentality whereby techno-science enframes nature as an insensate order or standing reserve to be rendered useful by us (§115). In another passage of the encyclical, Francis marks this contrast again in stressing that “since the world has been given to us, we can no longer view reality in a purely utilitarian way” (§159).

Apprehending nature’s givenness - nature as *gift* - transforms what might otherwise feel like a punishing or didactic encounter with natural and other limits into something Francis

²⁰Pope Francis, “What Does Integral Development Mean Today?” Speech, Address to Dicastery for Promoting Integral Human Development, Vatican City, April 4, 2017, <https://www.catholicculture.org/culture/library/view.cfm?recnum=11531>.

²¹*Ibid.*

characterizes as an experience of joy, wonder, and awe - even feelings of “inner peace.” “Inner peace,” he writes, “is closely related to care for ecology and for the common good, because, lived out authentically, it is reflected in a balanced lifestyle together with a capacity for wonder which takes us to a deeper understanding of life” (§225). Nature provides tangible encounters with a reality that is given, thereby creating awareness of our limits. By embracing limits we begin to perceive a broader horizon, a wider reality of wonder and mystery, that Francis evokes throughout *Laudato Si’*.²² Welcoming limits - recognizing that we are not God - we find God in nature’s inexhaustible wonder and mystery. The reality encountered through this wider vision is not only relational but specifically *Trinitarian* in nature, for Francis argues that the Trinity leaves an indelible “mark on all creation” (§239). Francis turns to Saint Bonaventure, who believed that “*each creature bears in itself a specifically Trinitarian structure, so real that it could be readily contemplated if only the human gaze were not so partial, dark and fragile. In this way, he points out to us the challenge of trying to read reality in a Trinitarian key*” (§239). This reality often eludes flawed humans even though it is “so real.”

Realities Are Greater than Ideas

In other ways as well, Francis presents reality as something wondrous, positive, and inspiring, even while it entails inescapable limits for human beings. Some commentators have keyed in on an aphoristic phrase that appears more than once in *Laudato Si’*, as well as in some of Francis’s other writings and speeches: “Realities are greater than ideas” (see, e.g., §110, §143). This expression is said to be one of Francis’s favorite insights. But what does it mean?

Some readers take Francis to be claiming that *facts* are greater (or more important) than ideas. “Rather than starting with philosophy and theology,” Fr. Thomas J. Reese observes, “the first chapter of the encyclical starts with science. What are the facts?”²³ Previous popes John Paul II and Benedict XVI insisted that if reality did not reflect ideals, the reality would have to change, Reese contends. Not so for Francis, for whom “if facts and theory clash, he, like a good scientist, is willing to question the theory.”²⁴ To be sure, Francis takes facts seriously. He has scientific training and he makes good use of it. But beyond a general orientation to science, I find little evidence for the claim that scientific facts are synonymous with reality for Francis, or that *ideas* are for him the equivalent of *theories*. If anything, access to reality seems often to entail an

²²*Laudato Si’* is also replete with references to “broader” visions, horizons, meanings, and realities.

²³Fr. Thomas Reese, “Facts Are More Important than Ideas,” *National Catholic Reporter*, July 30, 2015, <https://www.ncronline.org/blogs/faith-and-justice/pope-francis-facts-are-more-important-ideas>.

²⁴*Ibid.*

experiential, practical dimension for Francis - something lived rather than merely cogitated.²⁵ Reality as a whole is something that appears to exist prior to its classification and compartmentalization into science or facts about the world (hence its givenness). On my reading, reality often appears as something quite dynamic; it defies rigidity and ideology, and it has a moral structure. In a remarkable passage from *Evangelii Gaudium*, Francis further elaborates on his claim about realities and ideas by listing some of the ways we tend to “mask” reality: “angelic forms of purity, dictatorships of relativism, empty rhetoric, objectives more ideal than real, ahistorical fundamentalism, ethical systems bereft of kindness, intellectual discourse bereft of wisdom” (§231). Here, gesturing again to a reality that is fundamentally Trinitarian, Francis suggests that the phrase “reality is greater than ideas” “has to do with incarnation of the word and its being put into practice” (§ 231).

This interpretation of reality as bound up with action or praxis finds some support among commentators who understand Francis’s claim that reality is greater than ideas to mean in essence that “people are more important than ideas.”²⁶ This interpretation stresses that reflection on important issues begins not with “ideological categories, but with the concrete experiences of ordinary people.”²⁷ For example, Francis frequently tosses aside his prepared remarks in order to hear the stories of people in his audience. In one instance that gained widespread media attention, a young homeless girl asks Francis, though her tears, why children suffer. Francis responds by telling her, “[T]here is a phrase which gives me a little bit of consolation: ‘Realities are greater than ideas.’ ... [Y]our reality ... is greater than the ideas which I had prepared.”²⁸ This privileging of lived experience, especially experiences of the poor, over preformed ideas and pointed arguments, is a recurring theme in Francis’s teaching. In *Laudato Si’* Francis worries that lack of contact and direct encounters with others can “lead to a numbing of conscience and to tendentious analyses which neglect parts of reality” (§49). All this is part of what Francis considers the globalization of indifference.

Reality in Relation to Techno-Science

Francis’s warning against masking reality through rigid classification and definition, or disordered attachment to ideology, leads us back once more to the place of techno-science in

²⁵As indeed it does for Rachel Carson.

²⁶Inés San Martín, “For Pope Francis, People Are More Important than Ideas,” *Crux*, September 18, 2015, <https://cruxnow.com/papal-visit/2015/09/18/for-pope-francis-people-are-more-important-than-ideas>.

²⁷Ibid.

²⁸Sebastian Gomes, “Reality Is Greater than Ideas: A Reflection on the Theology of Pope Francis for Theologians,” *Salt and Light Media*, July 22, 2017, saltandlighttv.org/blogfeed/getpost.php?id=76481.

the overarching moral claims of *Laudato Si'*. One way in which humans labor, consciously or not, to shut out the reality of interconnection and the dynamism of life and creation is through what we might call scientism. Scientists who disregard science's own limits may come to regard its practices and methodology as a self-sufficient paradigm that is applicable to everything. Hence, another way in which Francis apophatically defines reality is by contrasting it with reductionist and specialized modes of perception that encourage fragmentation of a mysterious wholeness. Technology abets specialization, he argues, and makes it "difficult to see the larger picture" (§110). His concerns about reductionism and fragmentation are part of a general worry about slavish adherence to ideologies, teachings, and laws that isolate parts from wholes and prevent openness, dialogue, and reflection.

Thus, Francis proposes that when knowledge is fragmented it actually becomes a form of "ignorance" (§104). Knowledge fragmented into specialized disciplines is, like scientific reductionism, a tool, a heuristic framework, not an epistemology unto itself. "Fragmentation of knowledge proves helpful for concrete applications, and yet it often leads to a loss of appreciation for the whole" (§ 110). Useful for solving particular problems, these tools fail to capture reality's mysterious essence. Reminiscent of a claim frequently attributed to Gabriel Marcel that life is not a problem to be solved but a mystery to be lived, Francis argues that "rather than a problem to be solved, the world is a joyful mystery to be contemplated with gladness and praise" (§2). Nature, in its own way already an interconnected system, participates in this mysterious reality. But *creation*, which is inherently relational and moral, owing to its givenness, its status as a gift, finds completion in God. "The universe unfolds in God, who fills it completely. Hence, there is a mystical meaning to be found in a leaf, in a mountain trail, in a dewdrop, in a poor person's face" (§233). This mystical meaning, perceived through the lens of creation as a gift, is also what Francis means by reality. His insistence that the world is not a problem to be solved appears in passages praising St. Francis who always asked that part of the friary garden be left wild and uncultivated so as to serve as a reminder of God. The divine wildness is symbolic of St. Francis's "refusal to turn reality into an object simply to be used and controlled" (§11). It is symbolic, in other words, of a refusal to see the world through the narrow lens of the technocratic paradigm.

Francis also worries about forms of ignorance and absolutization of knowledge that come with a narrow focus on one course of study or discipline. He calls for dialogue among different disciplines "since each can tend to become enclosed in its own language, while specialization leads to a certain isolation and the absolutization of its own field of knowledge" (§201). It is almost impossible not to hear in Francis's concerns about disciplinary insularity and technosolutionism the echoes of Rachel Carson's indictment of shortsighted specialists, "each of

whom sees his own problem and is unaware of or intolerant of the larger frame into which it fits.”²⁹ Francis similarly warns that “fragmentation of knowledge and the isolation of bits of information can actually become a form of ignorance unless they are integrated into a broader vision of reality” (§140).³⁰ Fragmented and specialized knowledge are additional hallmarks of the technocratic paradigm and its false forms of reality.

In suggesting that knowledge is improved by interdisciplinary dialogue, Francis is not claiming that a more complete form of scientific knowledge will enable a total grasp of reality. However well understood by science, nature and life participate in a reality that always exceeds the category of nature itself. Francis again invokes a distinction between nature and creation that is elsewhere implied by his account of creation as a gift. Nature is a system “which can be studied, understood and controlled; creation can only be understood as a gift from the outstretched hand of the Father of all, and as a reality illuminated by the love which calls us together into universal communion” (§76). Creation is a mystery, and mystery invites and enables openness and genuine awe: “[T]he mystery of Christ is at work in a hidden manner in the natural world as a whole, without thereby impinging on its autonomy” (§99). Disciplinary “languages,” while appropriate in their own domains, can impede other ways of understanding the world. Invoking again his namesake, Francis argues that integral ecology “calls for openness to categories which transcend the language of mathematics and biology, and take us to the heart of what it is to be human” (§11). Saint Francis’s openness to nature, he explains, is the openness of “awe and wonder” (§11).

Summing up once more then: Despite its deep indebtedness to climate science or ecology, *Laudato Si’* suggests that the language of science cannot function as a form of address, a category of *relationality* vis-à-vis nature (or, more aptly, creation). Francis depicts technoscience as hampered by its own inescapable problematic, its “technique” of mastery and possession (§12). And yet, at the same time, Francis worries about the tendency of science to move in the other direction as well: Here it is not the isolating and reductive move than concerns him, but the sweeping, totalizing gesture that assumes all within a comprehensive framework. The techno-scientific paradigm that he decries is recognizable by its “undifferentiated” and “one-dimensional” aspect - a once-size-fits-all mentality (§106). This totalizing impulse of science shares with globalization the troubling tendency “to make us all

²⁹Rachel Carson, *Silent Spring* (Boston: Houghton Mifflin, 1962), 13.

³⁰An entirely secular argument very similar to this is impressively elaborated in *The Virtues of Ignorance*, a collection of essays that frequently demonstrates how science and its methods can serve to perpetuate ignorance through refusal of limits, as well as fragmented and overconfident forms of disciplinary knowledge. Bill Vitek and Wes Jackson, eds., *The Virtues of Ignorance: Complexity, Sustainability, and the Limits of Knowledge* (Lexington: University of Kentucky Press, 2008).

the same” (§108).

Gestures toward the fundamental sameness of the human “species,” with “species” understood as a geological force or collective entity dominating the planet, are now a common feature of contemporary discourse on the Anthropocene.³¹ Francis does not invoke the Anthropocene by name, but he and his science advisors have been briefed by many who frequently use the term (including atmospheric chemist Paul Crutzen, who is generally credited with coining the word).³² He does, however, allude to a troubling “ubiquity” of the human presence, as seen in a world transfigured and deadened by human technology and intervention. Like Rachel Carson, who wrote that “whenever we destroy beauty or whenever we substitute something man-made and artificial for a natural feature of the earth, we have retarded some part of man’s spiritual growth,”³³ Francis laments that “we seem to think that we can substitute an irreplaceable and irretrievable beauty with something which we have created ourselves” (§34).

Against the current grain of the Anthropocene that defines humans as an aggregate entity, Francis calls for respecting “various cultural riches of different peoples, their art and poetry, their interior life and spirituality” (§57). Above all, he insists we make moral distinctions between those who are most responsible for climate change and those who suffer disproportionately yet contribute little to the problem. “The poorest areas and countries are less capable of adopting new models for reducing environmental impact because they lack the wherewithal to develop the necessary processes and to cover their costs. We must continue to be aware that, regarding climate change, there are *differentiated responsibilities*” (§52). In this way, Francis defends a kind of interconnectedness that maintains difference and particularity within wholeness, and that aspires to unity without the homogenizing portrait of humans as a collective force. These concerns lead Francis to dwell at length on the marginalized and forgotten of the human and natural worlds, or what he calls “the excluded.”

Francis’s Chastened Anthropocentrism and the Reality of the Excluded

In the opening sections of the encyclical, Francis places before us a vision of unity, solidarity, and commonality. “We require a new and universal solidarity,” he writes (§14). He speaks of

³¹See, e.g., Matthew Lepori, “There Is No Anthropocene: Climate Change, Species-Talk, and Political Economy,” *Telos* 172 (Fall 2015): 103-124.

³²See Edwin Cartlidge, “Vatican Convenes Major Climate-Change Meeting,” *Scientific American*, April 27, 2015, <https://www.scientificamerican.com/article/vatican-convenes-major-climate-change-meeting>.

³³Rachel Carson, “The Real World Around Us,” in *Lost Woods: The Discovered Writings of Rachel Carson*, ed. Linda Lear (Boston: Beacon Press, 1999), 160.

“one world with a common plan” (§164). Invoking Benedict XVI, he appeals to a very old metaphor of nature as a book that is “one and indivisible” (§6). But gradually, Francis proceeds to nuance this vision of unity with steady reference to the excluded, a term that appears at least a dozen times in *Laudato Si’*. By “the excluded,” Francis means first and foremost the global poor. The excluded are “the majority of the planet’s population, billions of people” (§49), he points out. Yet their problems are treated “almost as an afterthought, a question which gets added almost out of duty or in a tangential way” (§49), as if their difficulties were mere “collateral damage” (§123). The excluded are those who contribute the least to problems like climate change while shouldering its greatest burdens. Francis’s focus on the poor underpins his contention that the planet too can be considered “the poor,” and that our degradation of humans and the earth is intimately connected. “The earth herself, burdened and laid waste, is among the most abandoned and maltreated of our poor” (§2).

While Francis does not deny that humans have dignity and unique qualities vis-à-vis nonhuman life, he often appeals to human worth in order to call attention to those “at the bottom of the pile,” who are also deserving of dignity (§49). Francis denounces the “globalization of indifference” for the plight of migrants fleeing conditions of environmental degradation and extreme weather (§52). “They are not recognized by international conventions as refugees,” he laments. He deploys a variety of images and terms to convey the idea that the poor are considered expendable and disposable in our “throwaway culture” (§25, §16). Francis’s next move is to extend concern for those at the bottom to encompass *all* neglected others, human and nonhuman alike. In this way, Francis promotes an expansive account of solidarity and a chastened form of anthropocentrism as a way of raising up all excluded and neglected beings.

This appeal to the unseen and neglected makes an appearance when Francis turns to nonhuman lifeforms who are relegated to the bottom of the pile. The category of the excluded points to the small and unseen in the nonhuman world - humble creatures generally less visible to us, and certainly less flashy than those that appear in news headlines or nature documentaries. Once more, he invokes the spirit of St. Francis in calling us to care for the overlooked, unsung, uncharismatic heroes of the natural world. “It may well disturb us to learn of the extinction of mammals or birds, since they are more visible,” he writes. “But the good functioning of ecosystems also requires fungi, algae, worms, insects, reptiles and an innumerable variety of microorganisms. Some less numerous species, although generally unseen, nonetheless play a critical role ...” (§34). Also among the unseen, at least for most of us, are coral reefs that shelter “fish, crabs, molluscs and algae” (§41).

While Francis could point to the plight of threatened species that exhibit astonishing complexity and even consciousness, these are not the ones on whom he chooses to dwell. Consciousness and complexity, he seems to suggest, may be overrated. Mirroring his discussion of humans

deemed disposable, Francis points to fishing practices that simply discard unwanted catch, adding that “particularly threatened are marine organisms which we tend to overlook, like some forms of plankton” (§40). There is something particularly compelling about a pope who worries about plankton.

In throwing the spotlight on the excluded, unseen, and overlooked, Francis moves toward a declaration of intrinsic value of all life. He stresses the importance of ecosystems, but he also proclaims that each organism is a “creature of God” and therefore “good and admirable in itself” (§140). While previous popes warned against treating nature as mere raw material, Francis goes further in valuing the “in itself” goodness of each organism. At the same time he appears to stop short of what he calls “biocentrism” (§118). Here he walks a line between two extremes that seem to coexist in a schizophrenic state: One extreme is the “technocracy which sees no intrinsic value in lesser beings”; the other extreme “sees no special value in human beings” (§118). In this context, Francis warns that avoiding anthropocentrism does not necessarily mean yielding to “biocentrism.” Not *necessarily*.

At this point, many environmentalists might feel a bit let down by Francis’s apparent retreat from biocentric valuing. However radical Francis may sound to some, “for those writing in the postmodern or posthuman context, he will still sound anthropocentric,” as Deane-Drummond notes.³⁴ At the same time, both the pope and his namesake likely appear “anti-anthropocentric when compared with the theological mainstream against which they define themselves.”³⁵

Attempts to gauge Francis’s anthropocentrism or lack thereof may not be the most helpful way to approach his argument here. Unfortunately, Francis does not define what he means by biocentrism and his suggestion that all beings have inherent value makes his apparent rejection of biocentrism somewhat puzzling. However, “biocentrism” holds different meanings in environmental ethics. It can, for example, entail equal importance for all living beings (biocentric egalitarianism). Clearly this is not an option for Francis, who understands humans to possess uniquely transcendent qualities. But Francis’s wariness of biocentrism may also have to do with a discomfort with positing *individuals* as the primary centers of value. In some forms, biocentrism is highly individualistic,³⁶ holding that “only individual organisms are morally considerable and that groups of organisms are morally considerable only insofar as the

³⁴Celia Deane-Drummond, “Pope Francis: Priest and Prophet in the Anthropocene,” *Environmental Humanities* 8, no. 2 (November 2016): 260.

³⁵Bronislaw Szerzynski, “Praise Be to You, Earth-Beings,” *Environmental Humanities* 8, no. 2 (November 2016).

³⁶See for example the individualistic biocentrism of Paul Taylor, which treats the lives of individuals rather than whole living systems (species, communities, ecosystems) as objects of moral respect. Paul Taylor, *Respect for Nature: A Theory of Environmental Ethics* (Princeton: Princeton University Press, 1986).

members of those groups are.”³⁷ In other words, it is possible to read Francis’s cautionary note about biocentrism as a refusal to define value narrowly - individually or one-dimensionally - rather than relationally and holistically. (*Ecocentrism*, by contrast, is generally understood as the more relational, systemic approach that values relationships among organisms and their environments, as well as prioritizing systems and wholes over individuals.) Moreover, life defined as *bios* might carry connotations of strictly biological categories or function - something suggestive of reductionism and thus a view that contravenes the spirit of wholeness and of life as “God’s loving plan” (§76). In the same way, as we have seen, Francis considers *nature* too confining a term, denoting something “studied, understood and controlled” (§ 76) whereas creation is a product of love.

But back to Francis’s category of the excluded: There are two final entities that round out Francis’s lamented category of those whom we exclude. One of these is future generations. When we think about our “common destiny,” he writes, “we cannot exclude those who come after us” (§159) Intergenerational solidarity is not an option, but rather a “basic question of justice” (§118). In this case, the excluded are truly unseen and invisible, for they do not exist in the present world. Finally, and most remarkably, Francis suggests that God is often among those whom we exclude. When anthropocentrism becomes entrenched and complete, we “exclude God from our lives or replace him with our own ego” (§224). Perhaps for this reason Francis finds it necessary to issue a very clear and somewhat prosaic reminder: “We are not God” (§67).

Competing Forms of Integral Ecology

Laudato Si’ stands on its own merits as an important contribution to environmental and theological reflection. However, we can perhaps gain an enhanced appreciation of the timeliness of Francis’s appeal to integral ecology, and a mysterious reality that imposes limits, by comparing his claims to ecological trends currently afoot. Indeed, Francis indicates that he is aware of certain problematic trends and intends to counter them. He argues that the distorted vision of anthropocentrism ushers in “false and superficial ecology which bolsters complacency and a cheerful recklessness” (§59). I find this to be one of the encyclical’s most intriguing claims. Whom does Francis have in mind as purveyors of superficial, reckless ecology? His comments here call to mind deep ecology’s delineation of deep and shallow ecology, where the former excavates the root causes, the disease itself, and the latter treats only the symptoms. This distinction, of course, finds parallels in Francis’s express interest in *Laudato Si’* of seeking

³⁷John Holt, *Environmental Ethics for the Long Term: An Introduction* (New York: Routledge 2015), 160.

out the roots and origins, not merely symptoms, of our current crises.

It is difficult to know whom Francis aims to indict. But a certain air of complacency and cheerful recklessness is especially evident, I would argue, among proponents of a so-called good Anthropocene, who endeavor to place an all-powerful human at the center of the (no longer) natural world.³⁸ Ecomodernists, for example, welcome humanity's rise to planetary dominance as an auspicious and exciting moment, a grand challenge that can be met through improved knowledge and technology, human ingenuity, and a general can-do attitude.³⁹ The Anthropocene is interpreted as "a sign of man's ability to transform and control reality," from which it follows that we "should not fear transgressing natural limits."⁴⁰ This approach is exemplified in Stewart Brand's *Whole Earth Discipline*,⁴¹ which takes on many of the sacred cows of traditional environmentalism, such as nuclear power and genetic engineering, as well as in the multi-authored *An Ecomodernist Manifesto*, produced by a progressive think tank called the Breakthrough Institute. This new breed of environmentalists believes that the "pragmatic path" will bring about "a good, or even great, Anthropocene."⁴²

Ecomodernists cast doubt on foundational concepts like ecological footprints or planetary boundaries, arguing that evolution shows a promising pattern of humans' adaptability to a wide range of environmental fluctuations and challenges. Above all, what ecomodernism denies is the reality of *limits*. Given Francis's repeated emphasis on reality as that which limits us, *Laudato Si'* carries an implicit critique of ecomodern sensibilities. Francis's concern about the shortsightedness of human interactions with nature - the belief that we can always or easily manage the consequences of our interventions - reads as a rebuke to Anthropocene enthusiasts and their confidence in a world remade and controlled by humans. Increased knowledge will not shield us from the kinds of unintended consequences that created our current wicked problems, Francis suggests. "Technology," he warns, "presented as the only way of solving these problems, in fact proves incapable of seeing the mysterious network of relations between things and so sometimes solves one problem only to create others" (§20). This mindset creates a "vicious circle" in which additional interventions merely aggravate the problems they were meant to solve (§34).

³⁸For example, note Anthropocene booster Stewart Brand's oft-repeated claim that "we are as gods and we have to get good at it," a tagline of ecomodernists and ecopragmatists.

³⁹See John Asufa-Adjaye et al., *An Ecomodernist Manifesto*, (April 2015), <http://www.ecomodernism.org/manifesto-english>.

⁴⁰Clive Hamilton, "The Theodicy of the 'Good Anthropocene,'" *Environmental Humanities* 7, no. 1 (2016): 133.

⁴¹Stewart Brand, *Whole Earth Discipline: Why Dense Cities, Nuclear Power, Transgenic Crops, Restored Wildlands, and Geoengineering Are Necessary* (New York: Viking, 2009). (Note the provocative subtitle of Brand's work.)

⁴²Asufa-Adjaye et al., *An Ecomodernist Manifesto*, 6.

Interestingly, ecomodernists' faith in techno-science and the promise of a human-managed planet aligns in some cases with a form of integral ecology proposed by philosopher and psychologist Ken Wilber and subsequently elaborated by Michael Zimmerman, an environmental philosopher whose previous endorsement of deep ecology and Heideggerian perspectives has given way in recent years to an enthusiastic embrace of Wilber's integral theory.⁴³ It is impossible to provide anything but the most rudimentary overview of these ideas in the context of this essay. Integral ecology in a Wilberian vein adopts a multi-perspectival, comprehensive approach to reality that is indebted to a framework devised by Wilber called the AQAL (all-quadrant, all-level). The AQAL model acts as a metatheory that assumes there are (at least) four irreducible perspectives, or quadrants, that must be addressed in order to understand and deal with environmental problems: objective, interobjective, subjective, and intersubjective perspectives. Wilber has developed his approach over decades, and it is currently applied to numerous disciplines and has a wide following. Zimmerman, together with Sean Esbjörn-Hargens, extends Wilber's theory to the realm of ecology and environmental philosophy.⁴⁴ An important feature of both Zimmerman's and Wilber's theories is the idea of hierarchical stages of cultural evolution, and tiers of consciousness, that are understood to have universal relevance and applicability for human history. Wilber and many who follow him hold that most people have not attained these higher stages of consciousness.

This form of integral thought makes a showing in a critical appreciation of *Laudato Si'* offered by Zimmerman. There Zimmerman faults Pope Francis for throwing support behind what Zimmerman sees as "Left-Green polity," evidenced, for example, by Francis's interest in "left-wing eco-activist" Naomi Klein, and Francis's apparent sympathy with deep ecological sentiments.⁴⁵ Most of all, Zimmerman criticizes the pope's failure to think along lines of cosmic evolutionary (hierarchical) development. Were Francis to do so, Zimmerman believes, he would appreciate the varying and *unequal* stages of cultural evolutionary development represented by different cultures around the world. This hierarchical system of cultural evolution "is the conceptual heart of integral theory," Zimmerman argues, "and thus integral ecology."⁴⁶ Francis

⁴³Zimmerman has written about this transition in a number of places, notably in his essay "From Deep Ecology to Integral Ecology: A Retrospective Study," *The Trumpeter* 30, no. 2 (2014).

⁴⁴Sean Esbjörn-Hargens and Michael E. Zimmerman, *Integral Ecology: Uniting Multiple Perspectives on the Natural World* (Boston: Integral Books, 2009).

⁴⁵Michael Zimmerman, "Integral Ecology in the Papal Encyclical, On Care for Our Common Home (*Laudato Si'*): A Critical Appreciation," *Institute for Cultural Evolution*, July 7, 2015, <https://www.culturalevolution.org/blog/how-integral-is-the-recent-papal-encyclical-on-care-for-our-common-home/#.Wgi6Xztrzc>.

⁴⁶*Ibid.* Zimmerman, citing ecofeminist thought, denies that positing these hierarchical levels of development and complexity constitutes a "dominator" hierarchy that underpins exploitation. (Zimmerman, "From Deep Ecology," 261.)

must make sharper distinctions between “differing levels of cultural and psychological development,” in order for the encyclical to be effective.⁴⁷ As it stands, Zimmerman charges, Francis does not appreciate modernism’s “significant advances *beyond* traditional Christianity.”⁴⁸

As his line of critique might suggest, Zimmerman embraces aspects of ecomodernism, arguing that “we must move forward in ways enabled by emerging techno-science,” including nuclear energy and intensified agriculture that uses genetically modified organisms.⁴⁹ Markets, he believes, effectively “harness the desire of individuals to improve their condition, by offering people alternatives in choosing products and services.”⁵⁰ In short, he endorses the conviction of ecomodernists that despite its harms, modernity “can still deliver on its promise of human flourishing while simultaneously preserving habitat for the rest of life on Earth.”⁵¹ What is perhaps more surprising, and troubling, than Zimmerman’s endorsement of an ecomodernist philosophy that celebrates free market, technological solutions to environmental problems is his disavowal of climate science. In a breezy retrospective, Zimmerman explains that his move away from deep ecology was motivated by a postmodern insight that “there are multiple perspectives available to human beings, and that nature reveals itself only within such perspectives.”⁵² While his brand of integral ecology recognizes the need for some standards of expertise within a given subject matter (otherwise how could professors presume to grade student work?), it also holds that “perspectives representing multiple disciplines and fields are needed both to characterize something as an environmental ‘problem,’ and to resolve that problem in a way that garners needed support from multiple perspectives.”⁵³ At a glance, this approach may sound reasonable (if hardly revelatory), but the multi-perspectivalism of their integral approach has led Zimmerman, and apparently Wilber,⁵⁴ to question whether the scientific consensus on climate is sufficiently inclusive of alternative and skeptical perspectives.⁵⁵ In the context of a lecture on integral ecology, for example, Zimmerman

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Ibid.

⁵⁰ Zimmerman, “Integral Ecology in the Papal Encyclical.”

⁵¹ Ibid.

⁵² Ibid., 267.

⁵³ Ibid.

⁵⁴ See Clive Hamilton, “Ken Wilber a Climate Denier? Say It Ain’t So,” *The Conversation*, July 30, 2015, <https://theconversation.com/ken-wilber-a-climate-denier-say-it-aint-so-45486>.

⁵⁵ Michael Zimmerman, “Including and Differentiating among Perspectives: An Integral Approach to Climate Change,” *Journal of Integral Theory & Practice* 4, no. 4 (Winter 2009). Science journalist John Horgan also relates

explains how his integral ecology would respond to the issue of climate change. He characterizes climate concerns as “hype” and argues that an aspiring integral ecologist would do well to spend time on “websites which challenge the prevailing wisdom about global warming.”⁵⁶ Zimmerman considers the intense focus climate change has garnered from the global scientific and health communities to be misguided, noting that the projected number of deaths from climate change pales in comparison to malaria-related deaths. He further contends that warming actually “greens” the world in positive ways because “plants love CO₂,”⁵⁷ and makes additional dubious claims about the relationship between sunspots and a warming climate.⁵⁸

Zimmerman’s critique of Francis for failing to place unequal cultural/evolutionary hierarchies (*à la* Wilber) at the center of *Laudato Si’* seems to assume that Wilber’s philosophy is the source of any approach that goes by the name integral ecology.⁵⁹ But while the two accounts coincide terminologically, their approaches are “very different ... and there are indications that [Wilber, Esbjorn-Hargens, and Zimmerman’s] ideas did not provide a direct inspiration for Pope Francis,” Ryszard F. Sadowski argues.⁶⁰ Sadowski’s genealogy here concurs with others that trace inspiration for Francis’s integral ecology to the work of Leonardo Boff, as well as the previous popes noted above. Above all, as has been noted, Francis’s conception of integral ecology

his experience of hearing Zimmerman discredit the consensus on climate science at a conference both attended. See John Horgan, “When Science Gets Personal,” *Scientific American*, October 22, 2015, <https://blogs.scientificamerican.com/cross-check/when-science-gets-personal>.

⁵⁶The lecture containing these claims and others regarding climate change is accessible on YouTube. BoulderIntegral, “PT. 2 Prof. Michael Zimmerman on Integral Ecology,” YouTube Video, 5:16, April 25, 2009, <https://www.youtube.com/watch?v=HkaAfVLAoO8>.

⁵⁷CO₂ does promote plant growth, but those benefits are likely to be offset by climate effects such as drought and heat stress. Moreover, and alarmingly, many studies currently indicate atmospheric CO₂ strips vital nutrients from food crops on which a large number of people around the globe depend. See, for example, Tiffany Stecker, “Swelling CO₂ Cuts Nutrition in Food,” *Scientific American E&E News*, May 8, 2014, <https://www.scientificamerican.com/article/swelling-co2-cuts-nutrition-in-food>.

⁵⁸*Ibid.*

⁵⁹I do not mean to suggest that the Wilber/Zimmerman approach is the only alternative to Francis’s integral ecology. A number of theologians have developed contours of integral ecology within the Catholic tradition and/or commented on Francis’s integral approach (see, for example, the writings of Celia Deane-Drummond). There are many other tributaries to what might be called integral ecology, more broadly construed, including the work of Thomas Berry, Aldo Leopold, Holmes Rolston III, Félix Guattari, Donna Haraway, and Bruno Latour, among others. The case for including a wide variety of approaches and thinkers within integral ecology (to the extent there is little that does *not* count as integral ecology) is made in Sam Mickey, Sean Kelly, and Adam Robbert, eds. *The Variety of Integral Ecologies: Nature, Culture, and Knowledge in the Planetary Era* (Albany: SUNY Press, 2017).

⁶⁰Ryszard F. Sadowski, “The Concept of Integral Ecology in the Encyclical *Laudato Si’*,” *Divyadaan* 27, no. 1 (2016): 25.

appears to build on Catholic social teaching regarding integral human development, a decades-old doctrine that stresses the whole person, body and soul, and seeks to bring together “the economy, finance, work, culture, family life, religion,” as fundamental to positive growth.”⁶¹ All forms of integral ecology put some emphasis on the benefits of multiple perspectives for solving complex environmental problems, but, as Zimmerman’s preoccupation with stages of cultural evolution and his puzzling rejection of climate science indicate, there is also much in Wilber’s integral thought that is, happily, not affirmed in *Laudato Si’*.

Conclusion

Pope Francis presents a form of integral ecology that speaks to the mysterious wholeness of reality as grasped through recognizing the fundamental relationality of creation as a gift. An appreciation for the givenness of creation can temper ambitions to transgress natural and human limits, and may set boundaries within which humans can genuinely flourish. This perception of reality serves to remind us that humans are most certainly *not God*. It is interesting to imagine how Francis might respond to expressions of integral thought like Zimmerman’s that take for granted humans’ entrance into the Anthropocene, and therefore counsel that we “might as well become good at running the show.”⁶² How might Francis respond to self-described integral ecologists who play down the violence of climate change as hype?

Clive Hamilton proposes that the roots of climate skepticism in Wilberian integral thought can be traced to belief in a cosmos that “displays an inexorable process of evolution, from simple matter through lower to higher forms of life and through lower to higher forms of consciousness until it reaches an ultimate state comprised of highly enlightened beings living in unity with each other and in harmony with the Earth.”⁶³ The dire predictions of climate scientists throw cold water on this account of inexorable upward evolution and the prospects of universal enlightenment and unity. More to the point, this version of integral thought threatens to undercut so much of what Francis achieves with *Laudato Si’* - not only much-needed

⁶¹Thomas D. Williams, “Paul VI Made ‘Integral Human Development’ a Catholic Touchstone,” *Crux*, July 11, 2017, <https://cruxnow.com/commentary/2017/06/11/paul-vi-made-integral-human-development-catholic-touchstone>.

⁶²Zimmerman, “Integral Ecology in the Papal Encyclical.”

⁶³Hamilton, “Ken Wilber a Climate Denier?” I find Hamilton’s diagnosis compelling, in part because it aligns with my own diagnosis of “universe story” narratives whose anthropocentric, ascendant, cosmic storyline runs counter to environmental values (Lisa H. Sideris, *Consecrating Science: Wonder, Knowledge, and the Natural World* (Oakland: University of California Press, 2017)). As Zimmerman himself notes, “in many ways, Wilber’s approach resembles the ‘new universe story’ told by Brian Thomas Swimme and Mary Evelyn Tucker, *Journey of the Universe*” (Zimmerman, “From Deep Ecology,” 259).

attention to climate science, but also Francis's dignifying treatment of those "lower," unseen, often excluded beings who exist across the spectrum of life. Francis's defense of inherently valuable but minimally complex and conscious lifeforms would make little impression on integral theorists dazzled by tiers of consciousness and developmental complexity. The same would likely be true of Francis's insistence that we "moderns" have much to learn from the cultural riches, interior life, and spirituality of non-Western or non-industrialized humans around the globe. Above all, Francis, who eloquently warns against the power of ideology to mask reality, would likely worry about the totalizing, one-size-fits-all, theory-of-everything approach that characterizes these forms of integral thought.⁶⁴ Reality, he might point out, is more important than even the grandest ideas of finite beings.

⁶⁴Ken Wilber, *A Theory of Everything: An Integral Vision for Business, Politics, Science, and Spirituality* (Boston: Shambhala, 2000).