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Pope Francis on the Environment III

Two Approaches to Climate Action

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A few weeks before the publication of *Laudato Si'*, another statement on environmental matters was released. Like the encyclical, this statement addresses fundamental questions about mankind's relationship with the natural world. And though not as widely read as the encyclical, it too has been the subject of discussion and debate in news outlets the world over. But whereas Pope Francis seeks to challenge the technocratic paradigm, the authors of the "Ecomodernist Manifesto" call for environmentalists to embrace technology and economic growth.

There is some irony in the reception that has met each of the documents. Pope Francis, the head of an institution that is often reviled for its doctrines on matters cherished by the political left, has found that his encyclical's appeal for action has resonated with many progressives, environmentalists, and scientists. Meanwhile, the "ecomodernists" behind the manifesto—a cadre of environmentalists, many of whom are associated with the Breakthrough Institute, a center-left think tank—have faced accusations of apostasy from their liberal and environmentalist brethren for endorsing nuclear power, criticizing the idea that we can live in harmony with nature, and generally rejecting the ecological orthodoxy that we need limits on growth.

There is, as Yuval Levin noted in his remarks on the encyclical, something paradoxical about the union of the left, which tends to see itself as the party of science, and the environmental movement, since the latter's holistic view of nature is at odds with modern science's ethic of human power over nature. And yet conflicts between the scientific community and the environmental movement are confined to a handful of issues, such as the use of genetically modified organisms and nuclear power. On questions about climate policy, the protection of biodiversity, the regulation of industrial pollution, and the use of natural resources, scientists and the environmentalists are in harmony: scientists tend to identify problems and environmentalists tend to see government regulation as a ready solution to those problems. This link between environmental science and

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government regulation has likely contributed to American voters' sense that Democrats are more trustworthy on environmental policy than Republicans, by a greater margin (according to a 2014 Rasmussen poll) than on any other issue.

However, the ways that *Laudato Si'* and the Ecomodernist Manifesto each approach environmental problems suggest that the decades-old divide between the pro-growth right and the green left is becoming more complicated—and that there may be reasons to hope for policy progress.

Human Beings and the World

There is a strain of environmental thought that sees Christian theology as the root of the modern attitude of dominating nature. In a review of *Laudato Si'* in *Nature*, the author describes the encyclical as a "faith-based document that views Earth as God's creation, something for humans to 'fill and subdue.'" This characterization is revealing of an ingrained belief about the Christian attitude toward nature, since the words "fill and subdue" do not even appear in the encyclical. In fact, the passage in the Bible (Genesis 1:28) where roughly that phrase appears is cited in the encyclical in order to *refute* the widely held view that the Christian creation account justifies "absolute domination over other creatures," which is presumably what the author in *Nature* had in mind with "fill and subdue."

One of the main sources of the argument that Christianity is responsible for the modern attitude of unrestrained domination over nature is Lynn White, Jr.'s famous 1967 *Science* article "The Historical Roots of Our Ecologic Crisis." White argues that "by destroying pagan animism, Christianity made it possible to exploit nature in a mood of indifference to the feelings of natural objects." While the encyclical does not explicitly cite White's paper, its chapter on "The Human Roots of the Ecological Crisis" seems to be a reference to White.

Though White blames Christianity for our ecological crisis, the intellectual historian was a great admirer of Saint Francis, whom he describes in his *Science* article as "the greatest spiritual revolutionary in Western history." Writing twelve years before Pope John Paul II designated Francis the patron saint of ecologists, White had proposed Francis for that role. Unfortunately, White argues, Saint Francis's revolutionary attempt to "substitute the idea of the equality of all creatures, including man, for the idea of man's limitless rule of creation" failed. This pessimistic assessment is perhaps a result of White's interpretation of Saint Francis's project as being to "depose man from his monarchy over creation and set up a

democracy of all God's creatures"—a goal that is very difficult to understand, let alone achieve.

Pope Francis surely does not consider his sainted namesake to have been either the failure or the radical revolutionary that White asserts. But the Pope's pessimistic assessment of the state of today's world—dominated by a "one-dimensional" technocratic paradigm of greed and frivolity that is causing us to transform the planet into "an immense pile of filth"—would seem to indicate that Saint Francis's message of "sublime fraternity with all creation," as the Pope puts it, has not been widely accepted. And though Pope Francis does not accept the simplistic charge leveled by White and others that Christianity is responsible for the human attitude of domination over nature, he seems to acknowledge that a certain interpretation of the Christian understanding of the human person is at least partly responsible for our current ecological crisis, writing that "An inadequate presentation of Christian anthropology gave rise to a wrong understanding of the relationship between human beings and the world."

The encyclical might also be seen as a response to the kind of challenge White poses when he writes that,

> Since the roots of our trouble are so largely religious, the remedy must also be essentially religious, whether we call it that or not. We must rethink and refeel our nature and destiny.

Both White and Pope Francis reject merely technical solutions. For White, science and technology are too imbued with what he considers the Judeo-Christian spirit of human arrogance. For Pope Francis, mere technical solutions would treat only the symptoms and not the underlying problems of our age, such as the technocratic domination of both nature and human beings, and views of the human person as either utterly autonomous or subject to complete physical determinism.

The technocratic domination of nature is not exactly a popular position for anyone to defend. Saint Francis's message of fraternity with other creatures (which resonates with the teaching of evolutionary science that all life on earth is one big family) plainly presents a more attractive image than the one commonly attributed to Francis Bacon of putting nature on the rack to torture her for her secrets. (Actually, Bacon did not use this particularly ugly metaphor to describe the experimental method, and so its attribution to him may show more about the suspicion in which Bacon's technocratic project is held by some contemporary environmentalists than

about the actual nature of the project.) But whether the project of mastering and possessing nature (or filling and subduing the Earth) began with the Scientific Revolution, or with the monotheistic abolition of animism, or whether we have always been trying to manipulate the natural world and have only recently gotten good at it, relentless technological progress and economic growth are defining features of the modern world. Thinking about how best to live with technological progress may mean looking not only to its critics, but putting these critics in dialogue with those who openly advocate something like the Baconian project.

Seeking Technical Remedies

Laudato Si' contains a number of calls for dialogue, including with those "who doggedly uphold the myth of progress and tell us that ecological problems will solve themselves simply with the application of new technology and without any need for ethical considerations or deep change." If there is anyone who answers to that description, it would be the authors of the Ecomodernist Manifesto.

What kind of dialogue is possible between these two camps?

Judging from their manifesto, the ecomodernists could be described as people who heard from the prophets of doom that it would be easier for a camel to pass through the eye of a needle than for the poor of the Earth to enter the kingdom of modernity and prosperity. But, unlike those environmentalists in wealthy countries who denounce the modern world while enjoying its blessings, the ecomodernists recognize that, though with today's technology it is impossible to lift the world's poorest out of poverty without destroying the environment, with the technologies of the future—next-generation nuclear and solar power, carbon capture and storage, high-intensity agriculture and aquaculture, and others—all things are possible. In addition to their enthusiasm for technology, the ecomodernists are different from many other greens in their forceful rejection of the Malthusian argument that we must limit economic growth, recognizing that environmental policies that require curtailing economic growth are politically impractical in rich countries, and are both impractical and morally unjustifiable in poor countries. Instead of seeking to "harmonize with nature to avoid economic and ecological collapse," the ecomodernists would have us develop technologies that give human societies greater independence from nature, since "nature unused is nature spared."

There are a number of ways the approach recommended by the ecomodernists seems to differ sharply from the approach recommended in the

encyclical. Where in *Laudato Si'* we hear that "everything is interrelated," the Ecomodernist Manifesto states that we can and should "decouple" human activity from nature. Where the encyclical rebukes the modern world for its crass materialism and obsession with technology, the ecomodernists offer a full-throated endorsement of the modern project of technological progress and economic growth. And where Pope Francis tells us we need a widespread moral transformation toward asceticism and charity, the ecomodernists take for granted that consuming more energy and more material goods will improve the lot of most human beings, and that we need technologies that will allow all to enjoy prosperity without unduly harming the natural world.

Pope Francis does not refer to the fledgling ecomodernist movement by name in *Laudato Si'*, but a handful of ecomodernists have responded to the Pope. Three ecomodernist leaders, Mark Lynas, Ted Nordhaus, and Michael Shellenberger, in a blog post called "A Pope Against Progress," identify Pope Francis as a representative of the traditional environmental movement they reject, writing that *Laudato Si'* "makes explicit the asceticism, romanticism and reactionary paternalism inherent in many aspects of traditional environmentalist thinking. It also helpfully draws out the religiously-originated narratives that underpin a lot of green themes of sinfulness/redemption and end-times doomsaying on issues like climate change."

A more sympathetic assessment appeared in *The Guardian*, where another prominent ecomodernist, Roger Pielke, Jr., agreed with the Pope that there are spiritual and religious dimensions to our current environmental problems. Pielke writes, however, that despite the religious roots of these problems "decisions about technological innovation, adoption and limitation are made based on far more prosaic considerations." This will especially be the case for the poorest nations in the world, which will continue to focus on economic growth even if that means using fossil fuel energy to do so.

What, then, do the ecomodernists have to offer? In contrast to the "one-dimensional paradigm" of technocratic domination that concerns Pope Francis, the ecomodernists propose what might be described as a two-dimensional paradigm. On one dimension are the *scope and extent* of our use of the planet's resources and ecosystems—for instance, the area of land used for agriculture, industry, and housing, or the amount of fossil fuels burned for energy—and on the other dimension are the *intensity and efficiency* of that exploitation. Increases in the latter can sometimes ameliorate problems associated with the former. For instance, modern

agricultural methods, including genetically modified organisms and artificial fertilizers, allow us to grow more food with less land, making it possible to spare more land for nature. Living in dense cities spares the surrounding countryside, and better technology can permit more efficient consumption of fossil fuels and therefore less pollution and global warming. The Ecomodernist Manifesto discusses at some length the advantages that fossil fuels can provide for some of the world's poorest who lack access to modern energy and still rely on firewood for heating and cooking, which requires deforestation and causes noxious indoor air pollution.

Where the ecomodernists argue that we must develop new and better technologies, especially energy technologies, if we are to solve environmental problems, in *Laudato Si'* we are told that "to seek only a technical remedy to each environmental problem which comes up is to separate what is in reality interconnected and to mask the true and deepest problems of the global system." Some problems, however, are not deeply connected. For example, while Pope Francis singles out "the increasing use and power of air-conditioning" as a "harmful habit of consumption," it is worth remembering that such energy-intensive activities result in pollution and the depletion of scarce resources only when a society needs to rely on dirty and non-renewable energy sources. Developing clean and renewable energy sources is a technical solution, one that would separate the consumption of energy from its most baleful environmental and economic consequences.

Of course, it is not obvious whether or when the technologies needed for clean and plentiful energy may be available, and until we have them, perhaps we should strive to curb our consumption of energy. But if it turns out that such sources as nuclear fusion are impossible to implement over the next century, that will not be because the moral problems of complacent over-consumption are inseparable from the economic and environmental problems caused by such consumption.

Another point raised by Pope Francis is also relevant to the subject of clean energy, even though he does not mention it in that context. Technology, he writes, can often prove "incapable of seeing the mysterious network of relations between things and so sometimes solves one problem only to create others." So energy sources like wind or solar that do not emit greenhouse gases will not be free of environmental problems—wind power requires rather extensive land use and can be dangerous to birds, while solar panels may require the use of rare elements and the production of batteries for storing electricity that could pose their own ecological problems.

However, the fact that technical solutions involve trade-offs does not mean that we cannot develop better sources of energy that involve more acceptable trade-offs. Moving from firewood to electricity generated in coal-fired plants is a genuine improvement, a technical remedy that separates cooking and heating from deforestation and severe indoor air pollution, even though the new source of energy contributes to local smog and global warming.

Still, even though some of the problems Pope Francis raises may be more amenable to technical remedies than he seems to believe, there are no technical remedies for other, deeper problems that worry him—such as the frenzied consumerism and complacent greed of those living in the world's richest countries, who too often seem too indifferent to the plight of the world's poorest. These vices will stay with us whether or not we find technical solutions for our ecological problems, and we will do well to reconsider the "alternative understanding of the quality of life" that Pope Francis reminds us Christian spirituality offers—a way of living that recognizes that "less is more" and that is "capable of deep enjoyment free of the obsession with consumption." This is a radical message, one with deep roots in the Christian tradition, and one that has never been easy to live by. Relatively free markets have helped to channel consumerism and self-interest into economic growth that benefits all, making this message even easier for many to ignore. But the harnessing of self-interest by markets does not transform greed and indifference to the poor into virtues; nor does the market render concern for the poor and charity unnecessary.

Substitution and Its Limits

The ecomodernists recognize that their case for preserving nature by decoupling human activity from environmental impacts "draws more on spiritual or aesthetic than on material or utilitarian arguments," since we "could survive and prosper materially on a planet with much less biodiversity and wild nature." Intensifying agriculture allows us to spare more wilderness from being used as farmland, while extensive desalination plants powered by advanced energy technologies could allow us to leave rivers flowing naturally into the sea rather than redirecting them to our farms and cities. But these same technologies mean that even if we destroy large swaths of wilderness and drain our rivers and lakes, we will still be able to eat and drink. While we could not survive if the natural environment were utterly ruined, we could prosper very well under

many scenarios of terrible ecological devastation, and so straightforward utilitarian economic analyses of environmental problems are not enough on their own to justify protecting nature.

On the other hand, the manifesto also claims that "humans are as likely to spare nature because it is not needed to meet their needs as they are to spare it for explicit aesthetic and spiritual reasons." Technological innovations that make the exploitation of nature unnecessary for the satisfaction of human desires may be the best way to prevent the exploitation of nature. As Roger Pielke, Jr. has argued in the context of climate change, "when policies focused on economic growth confront policies focused on emissions reductions, it is economic growth that will win out every time." Developing technologies that will allow economic growth to continue without causing environmental harm will be necessary as long as this "iron law" holds true. Nonetheless, developing the technologies necessary to sustain economic growth without harming the environment will not happen without political action and moral pressure.

The idea of "substitution" looms large in the ecomodernist agenda—developing technologies that can replace environmentally destructive practices. For example, fossil fuels and electricity, as already mentioned, have replaced firewood as a source of energy for heating and cooking in much of the world. In some cases, such technological substitution can be much more important than moral persuasion. Consider the case of energy production, which dominates the debate over climate change. Almost all forms of economic activity require energy: the production of food and consumer goods, the processing and distribution of water, the construction of housing, the lighting of cities and homes—indeed, nearly all the technologies that help people "live with more dignity and less suffering," as Pope Francis puts it. Persuading people to reduce their energy consumption will therefore always be very difficult, even in rich countries that already consume large amounts of energy, while limiting the development of energy sources in poor countries is not only politically impractical but morally odious.

But the ecomodernists may be placing too much faith in technological substitution. Consider a case study of substitution offered by some of the Breakthrough Institute scholars who signed the Ecomodernist Manifesto: the replacement of whale oil by fuels such as kerosene, which, they argue, helped spare many species of whales from extinction at the harpoons of the whalers in the nineteenth century. But whaling peaked around 1960, when about 70,000 whales were killed per year, more than a century after substitutes were found for the most important uses of whale oil as a fuel.

Meanwhile, even as alternatives to whale oil were developed, so too were powerful new tools for whaling: the exploding harpoon gun that could be used to kill the blue whale and other large, fast-swimming whales, and the factory ships that could render whales into oil and meat on an industrial scale. A whaler in 1938 boasted that "one modern factory ship can take more whales in one season than the entire American whaling fleet of 1846 which number over 700 vessels." Later in the twentieth century, whale oil was used for cosmetics and other niche applications, rather than for providing illumination. Eventually, whales were hunted largely for their meat, a resource for which substitutes have always abounded.

Campaigns against whaling were a significant part of the early environmentalist movement, and the 1946 International Convention for the Regulation of Whaling laid the groundwork for later restrictions, such as the 1982 decision to put a moratorium on commercial whaling. The rise and fall of whaling, then, seems to conform less to the ecomodernist narrative of technological innovation allowing humans to spare nature than to the traditional environmentalist's story of technology enabling the mass exploitation of nature, only to be restricted after moral suasion by activists and regulations imposed by international agreements.

The slaughter of elephants for ivory provides another example. The availability of substitutes for ivory certainly makes the moral case against it easier—if we really faced a choice between slaughtering elephants for their ivory and going without piano music, that might be a difficult decision. But ivory substitutes are just as good as actual ivory for most purposes, and are cheaper as well. Yet the availability of substitutes is hardly relevant in the case of carved ivory art, for example, where the authenticity or genuineness of the material is precisely what collectors seek. Most of the features of any given ivory sculpture could be replicated using some other cheaper material, and so there is little that further technical advances could do to make people less likely to use ivory for these purposes. In this case, too, technological substitution must be supplemented by moral suasion and enforced legal restrictions.

(It is worth noting that technological substitution is relevant to some non-environmental issues as well. For example, the debates over embryonic stem cell research were largely focused on the morality of killing human embryos to create pluripotent stem cells, which could then be used to generate different kinds of cells, tissues, and organs for treating injuries and degenerative diseases. A technological substitution became available in 2007, when scientists reported creating human pluripotent stem cells that did not require the creation or destruction of embryos. Yet

despite the availability of this alternative, embryo-destroying stem cell research continues to this day; the moral pressure on the scientific community has not been adequate to keep scientists from pursuing all available avenues of research, including those that require the destruction of embryos. However, the availability of an effective and ethically acceptable alternative makes some of the worst prospects of the embryonic stem cell project—such as the creation and destruction of cloned human embryos on an industrial scale in order to create personalized stem cell lines for millions of people—now far less likely to come to pass.)

Practical Morality

The ecomodernists and Pope Francis approach our ecological problems in very different ways, the former emphasizing growth, technology, and separation from nature, the latter emphasizing restraint, charity, and the interconnectedness of all things. But in other ways, the Pope and the ecomodernists complement each other. Both provide an alternative to the way of looking at environmental issues that has been framed by many scientists and environmentalists, where merely doing a better job of educating and informing the public and policymakers about environmental problems would lead to the acceptance of the measures necessary for solving these problems. Some have been wiser and recognized that science does not dictate policy and that any political decision also involves a moral dimension. But even they have often failed to recognize that the moral dimension of environmental issues is not simply another set of propositions about which the public needs to be informed; whether it is morally good or bad that the poorest people in the world will suffer because of global warming is not a difficult question.

In theory, we can all assent to the proposition that the world's wealthiest people should do more to help the world's poorest. But actually living out this truth is deeply challenging. This is why Pope Francis has criticized the "practical relativism typical of our age"—saying that the tendency to "[make] decisions as if the poor did not exist [and set] goals as if others did not exist" is even more dangerous than doctrinal relativism.

Pope Francis and the ecomodernists both recognize that what is needed is not merely to amass information about environmental problems, nor to make empty commitments to "emissions targets," nor simply to talk about how the world's wealthiest should do more to help the world's poorest. Rather than the enforcement of doctrinal orthodoxy concerning the scientific and moral issues related to the environment, what we need are

real efforts to improve the lives of the poor while preserving the natural world. So the ecomodernists' proposals to use technology to clean up the planet and alleviate the plight of the poor give those of us in the wealthiest parts of the world practical ways of solving environmental problems that go beyond the moralistic posturing of declaring opposition to fossil fuels. Likewise, Pope Francis's exhortation to care for our common home and for the poor provides the "spiritual and aesthetic" motivation that ecomodernists acknowledge to be necessary if we are to deliberately substitute ecologically friendly technologies for those that destroy natural environments. Despite some of the tensions between their positions, the moral seriousness of Pope Francis and the technological ingenuity of the ecomodernists will both be needed to move us beyond the fruitless debates that characterize so much of environmental politics today.