

Human Population, Noah's Ark & Climate Change: Christian Thoughts for the Anthropocene Era

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ABSTRACT

This paper seeks to begin a Christian conversation about why human population control is necessary for a sustainable global society in the throes of climate change brought on by the consequences of the Anthropocene era. It first examines some of the central philosophical claims of Paul and Anne Ehrlich that the author believes have been too casually dismissed by the scholarly community, due to their mathematical miscalculations about population growth. The author then reviews recent predictions about human population by the United Nations, paying special attention to their threefold typology for addressing the issue: a bigger pie, fewer forks, or better manners.

The paper shifts to an examination of the Vatican's recent commentary on this issue, especially as the last three popes have emphasized the relationship between excessive consumerism and human population. It then explores a seminal Christological concern that relates directly to this topic: Is Jesus fully human without being married and having children? Finally, the author argues that the Noah's ark narrative provides six key theological insights for a Christian contribution to the discussion about population control and carrying capacity as well as the relationship between human and nonhuman creatures in the age of climate change.

INTRODUCTION

There is very little Christian discussion in the United States these days about how many children a couple *ought* to have. On the Protestant side, there are some who cavalierly suggest that the planet can sustain billions more humans with very little serious consideration for how well those humans might live.¹ Will they live in fantastic luxury like the privileged few in the global north of the planet today, or will they live below a legitimate level of sufficiency and dignity that at least some privileged global north citizens would find minimally appropriate? Many Protestants avoid entering the discussion altogether; ignorance or avoidance is bliss. Most Protestants in the United States would not have a clue as to where to start a conversation about population control. The Vatican, on the other hand, thinks about this topic differently since, for centuries, it has boldly proclaimed a natural law position on family planning and thus has eschewed artificial birth control and any limitation family size. Moreover, when it comes to any discussion about population control, the Vatican's position has remained consistent over at least the last three papal voices: talk about population control is often a smokescreen for legitimizing the overconsumption and inequitable distribution of goods and resources by the privileged few in the global north.

Instead of dismissing the topic as merely a case of academic navel-gazing, the author maintains that this is a time wherein this conversation means more than perhaps ever before in the history of human civilization. The world is firmly ensconced in the age of climate change, or as some call it, the Anthropocene era,² and hence, how many humans the planet can support and how many children Christians should have are more pertinent than ever. According to the best climate scientists, living on this planet in the next 100 or so years will be radically different than it has been for the last 10,000 or so years. Anglican theologian John Painter argues that we must face this reality squarely. “I can see no solution to the threat to all life on our planet if the growth of the human population is not checked. Unfortunately, Churches and religious groups generally have given no constructive lead on this issue.”³ He goes on to maintain, “Can life, as we know it, survive if the human population continues to multiply? I doubt it. Indeed, I wonder if human life will survive.”⁴

The goal of this paper is to provide the beginning of a constructive lead on this issue, and thus, argue that Christians of all sorts must start to think more soberly and explicitly about what the size of the human population should look like in the age of climate change. In particular, the author contends that the Noah’s ark narrative may be theologically illustrative as we seek to think through and contribute to this much needed global conversation. Finally, taking a cue from Pope Francis, this paper asserts that such lessons should be included in a new ecological citizenship curriculum that addresses the challenges of the Anthropocene era.

AVOIDING THE TOPIC

While Paul and Anne Ehrlich have been much maligned for the inaccuracies of their population predictions, they raise four significant issues that are too easily shrugged off because of mathematical miscalculations. First, they argue that humans are too often delusional when it comes to considering population growth because they do not want to confront the basic biological fact: indefinite growth is not possible. “The only remaining question is whether [population growth] will be halted through the humane method of birth control, or by nature wiping out the surplus.”⁵ If climate change is teaching nothing else, it is that nature has the amazing capacity to alter the dynamics of a species that does not live within environmental boundaries. Second, they maintain that far too few people make the connection between environmental ills and other global problems caused by increased human population. “To a degree, this failure to put the pieces together is due

to a taboo against frank discussion of the population crisis in many quarters....”⁶ For instance, they assert that while those on the American political left tend to believe that highlighting overpopulation will distract us from pressing social justice concerns, those on the American political right are inclined to believe that addressing overpopulation at the policy level will encourage abortion and/or severely damage the economic growth and development potential of a nation.

The other two issues they raise are more perennial in nature and have been casually neglected for far too long, especially by Christians. Ehrlich states that evolution has produced creatures, including humans, who have an urge to reproduce.⁷ While some Protestants might cavalierly call this a natural urge to have children, natural law proponents, Roman Catholics or otherwise, might say that it is within the natural order of the universe that God created creatures, including humans, to reproduce. This seems simple enough, even if humans do not regularly reflect upon it or its implications for living within the ecological boundaries of this planet. The final issue is just as simply stated but belies the complexity of this topic. “[O]ur urge to reproduce is hopelessly entwined with most of our other urges.”⁸

What might those other urges or concerns be that arise when contemplating having children? First, there are obvious religious concerns. For Christians, does obedience to God demand that we “be fruitful and multiply”?⁹ Whether one thinks about this within a strict divine command sense or follows a more nuanced Roman Catholic natural law approach, the issue remains the same: Are only those who are compliant with this command obedient to God? This command is taken very seriously, even if it is not recognized explicitly. As James Nash notes, it may be the only command obeyed faithfully.¹⁰ Second, there are clear psychological urges. Some people have an intense urge to have children, which leads to more critical questions like: Does having children allow one to partake in the fullest human experience possible? What will other people (family, friends, society, etcetera) think of someone who cannot conceive and have children because of physiological factors? What will other people think of someone who voluntarily chooses not to have children? Third, friends and family are not the only parties interested in one’s thoughts on procreation. The government is also interested in what you think about procreation. Leaders of nation-states have their own agendas that support specific-sized populations. Governments think about things like the possible size of their military, the number of employable citizens, and a number

of those citizens who will pay their taxes. Governments might also worry about how many citizens can financially support children versus those who cannot and will need substantial assistance from the state. Fourth, citizens within nation-states might think about what sort of individual procreative liberties they have. Can the government implicitly or explicitly tell people what to do with their bodies? Can the government implicitly or explicitly tell people whether their marriage must be procreative? Should the government coerce people regarding the number of children they can have (e.g., the former one-child policy of China or U.S. tax incentives)?

While there are many other concerns and urges that are hopelessly entwined with having children, these suggestions demonstrate briefly why many American Christians, especially Protestants, have avoided having this difficult conversation.¹¹ While one person thought they were discussing the topic theologically by thinking about whether or not God was calling them to have children, the conversation partner was evaluating it psychologically by considering whether or not one's family would understand how truly difficult trying to get pregnant has been on your marriage. Conversation partners can become quickly frustrated as the discussion goes at best nowhere or, at worst, becomes intensely heated. It seems better to many just to leave the whole topic alone.

A POPULATION PROBLEM?

Population estimates are onerous to compute because so many intricate factors are involved. One has to compute birth rates and death rates; the number of people who have access to adequate healthcare, nutritious food, sanitation services, and immunizations, just to name a few. That does not even factor in calamities like drought, which can lead to famine or war that can lead to massive casualties. That said, the United Nations predicts that the human population will likely be 9.7 billion people by 2050 and 11 billion by 2100.¹²

But the sheer number of humans living on this planet does not give us enough context to ascertain whether or not that is too few, too many, or just right. We need more context for understanding human population growth. For that, we need a brief primer on the notion of carrying capacity. Carrying capacity represents the maximum population size of a given species that its environment can sustain indefinitely (at least theoretically) given necessities like food, water, and other ecosystem services required for survival. This shifts our emphasis

from the sheer number of humans on the planet to how many humans our planet can sustain, taking into account food, water, and other ecosystem services upon which they depend. Just as predicting human population is tricky, so too is predicting the maximum amount of humans Earth can reasonably sustain. United Nations Environmental Program (UNEP) argues, “the outcome of attempts to define a static ceiling for sustainable human population seems destined to uncertainty.”¹³ Instead, UNEP points out the need to measure and understand more fully the complex systems upon which humans, and ultimately the rest of the planet’s species, depend. Only then might one understand more about the relationship between human population and the amount of stuff that it takes to sustain it. In other words, if one can get a reasonable sense of what the Earth can provide, one can then calculate how many humans that amount of sustenance might support.

As one might imagine, estimates for Earth’s carrying capacity vary greatly. Some suggest the Earth can carry a human population as low as 8 billion, which is an amount that will be reached in the coming decades; while others propose a carrying capacity as high as 16 billion.¹⁴ This gap between estimates is obviously substantial, and it is further complicated when considering the fundamental question that actually underlies the attempt to discern Earth’s carrying capacity: how much “stuff” does a human need to live a minimally dignified, if not flourishing, life? This, of course, is not a question that can be addressed scientifically, even though most estimates of carrying capacity are assumed to be objectively scientific. Instead, one must ask not only how much food and water do humans need to survive, but also how much access to electricity, healthcare, education, and so forth, do they need to live minimally dignified, if not flourishing, lives. Here is the crux of the conundrum: what one person says is a “need,” another person says is a “want.” For example, is a smartphone really a need or a want? The global north answers the questions of dignity and flourishing far differently than the global south. Those in the United States, for instance, consume far more food, water, natural resources, and energy than those in Bangladesh. This is not only patently unfair to those in Bangladesh, but it is also fundamentally unsustainable. UNEP concludes, “if everyone lived the lifestyle of the average American we would need five planet Earths.”¹⁵ Due to the scope of this article, however, there is not space to address other critical issues related to this topic. For example, the distribution of technology, along with other goods and services, on this planet is again not a matter for scientists to conclude. Questions of how much

should humans get and how things should be distributed are at least moral, ethical, and political in scope. But make no mistake, these topics are intrinsically linked to this question: How many people are living on the planet?

UNEP contends that there are three possible solutions to the carrying capacity dilemma: a bigger pie, fewer forks, or better manners.¹⁶ “A bigger pie” indicates not only being more efficient with the natural resources we currently have but also developing and distributing new forms of technology that would provide services to greater numbers of people. For example, the development and distribution of affordable renewable energy (e.g., solar, wind) would provide electricity to those who currently do not have access to much of the power that is derived from nonrenewable resources like oil or coal that often rely upon large centralized distribution centers that require vast amounts of costly infrastructure. “Fewer forks” signifies a stage of less or even zero population growth after the demographic transition that often accompanies industrialized political economies. Unfortunately, UNEP notes that the sort of stabilization effect that a demographic transition can have on national population may not be inevitable as once thought. The third possibility is “better manners.” “This approach is to rationalize and improve the connection between the decisions and actions taken by people and the consequences of those actions, so they remain within key planetary boundaries.”¹⁷ In particular, UNEP’s primary suggestion is to modify economic parameters that it believes might assist people in developing better manners.

While the behavior of many American Protestants suggests at least implicitly that they believe this issue is better left to scientists, economists, or politicians, it is clear that these possible solutions are far more moral and theological in scope than UNEP and other global agencies may care to admit. Therefore, Christians have a considerable obligation to engage in this global conversation. For example, while the research and development that might create the parameters for making “a bigger pie” possible may lie principally in the hands of scientists, the distribution of new forms of technology relies fundamentally on theories, and more importantly practices, of distributive justice that either include the poor or, as history often shows, further disenfranchises them. Furthermore, the topic of “fewer forks” is not primarily about rushing developing countries through their dirty phases of industrialization in order to wish for a population slowdown to occur through a demographic transition, it involves concepts of what we believe the human family is and whether or not governments should have

any role, coercive or otherwise, in defining it. Finally, a global discussion about “better manners” should not be delineated principally by adapting economic systems, but instead by examining forms of justice that might empower “the least of these.”¹⁸ Only after that examination should we seek to employ economic systems to help us achieve our desired goals. In just these three examples alone there is significant space for Christians to participate meaningfully in this much needed global dialogue. While many Protestants have shied away from this topic, thankfully the Vatican has been a ready and consistent theological contributor.

A CONSISTENT MESSAGE FROM THE VATICAN

The last three popes have been especially sensitive to national and global population conversations. For the most part, they argue consistently and rather persuasively that such conversations are often smokescreens to justify overconsumption and inequitable distribution schemes that benefit the wealthy minority of the planet while their behavior disproportionately disenfranchises the planet’s poor and dispossessed. For example, Pope Francis asserts,

Instead of resolving the problems of the poor and thinking of how the world can be different, some can only propose a reduction in the birth rate. At times, developing countries face forms of international pressure which make economic assistance contingent on certain policies of “reproductive health.” Yet “while it is true that an unequal distribution of the population and of available resources creates obstacles to development and a sustainable use of the environment, it must nonetheless be recognized that demographic growth is fully compatible with an integral and shared development.” To blame population growth instead of extreme and selective consumerism on the part of some, is one way of refusing to face the issues. It is an attempt to legitimize the present model of distribution, where a minority believes that it has the right to consume in a way which can never be universalized, since the planet could not even contain the waste products of such consumption.¹⁹

Similarly, Pope John Paul II maintains that the wealthy of today are troubled by the world’s poor much like the Pharaoh of ancient times who brutally oppressed the Israelites and their children.²⁰ Governments would rather impose birth control solutions as an answer to supposed population problems rather than addressing equitable wealth distribution.²¹

When thinking about the fundamental roots of this issue, the Vatican’s adherence to the natural law tradition as well as the tendency to favor a strong form of anthropocentric thinking is clear. For instance, Pope Benedict maintains,

In order to protect nature, it is not enough to intervene with economic incentives or deterrents; not even an apposite education is sufficient...The book of nature is one and indivisible: it takes in not only the environment but also life, sexuality, marriage, the family, social relations: in a word, integral human development. Our duties towards the environment are linked to our duties towards the human person, considered in himself and in relation to others. It would be wrong to uphold one set of duties while trampling on the other. Herein lies a grave contradiction in our mentality and practice today: one which demeans the person, disrupts the environment and damages society.²²

Additionally, in his proposal for an “integral ecology,” Pope Francis asserts, “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. Strategies for a solution demand an integrated approach to combating poverty, restoring dignity to the excluded, and at the same time protecting nature.”²³

The message from the papal seat is clear: there is not a human population problem *per se*, but rather a fundamental sharing problem. The wealthy do not want to share equitably with the poor. Pope Benedict XVI argues, “On this earth there is room for everyone: here the entire human family must find the resources to live with dignity, through the help of nature itself—God’s gift to his [*sic*] children—and through hard work and creativity. At the same time we must recognize our grave duty to hand the earth on to future generations in such a condition that they too can worthily inhabit it and continue to cultivate it.”²⁴ While one may profoundly appreciate the deep and abiding papal concern for the poor and the calls for the fair distribution of God’s resources to all of God’s children in light of intergenerational equity, which extends back to at least to the patristic theologians and their understanding of the use of wealth,²⁵ one may question whether the papal prescription that prizes the distribution of resources over and above a discussion about population, even in an effort to shield the poor from injustice, is entirely appropriate, especially in the age of climate change. In other words: Is this a critical tipping point for the number of humans this planet can carry? Pope Francis himself contends, “Doomsday predictions can no longer be met with irony or disdain.”²⁶ If nothing else, it is painfully evident that our massive human population exacerbates every environmental problem. Dirty air, unsafe drinking water, natural resource depletion, nutritionally lacking food, and biodiversity extinction are all compounded significantly by a large human population. It is unclear that the Vatican acknowledges this basic fact. While it is true that the

wealthy are often the ones pushing the issue of population control and carrying capacity, is it not possible to have a discussion about population growth and excessive consumerism at the same time? A discussion about population growth does not necessarily mean that people are “refusing to face the issues,” as Pope Francis claims. One has to admit that this is a precarious juncture in history. One must come to grips with the fact that carrying capacity, distribution of goods, and human population are intrinsically linked, if not hopelessly entwined, to borrow Ehrlich’s phrase. One can no longer prioritize one over the other.

A CHRISTOLOGICAL QUESTION

One of the central, if not primary, theological concerns to addressing population control is a christological one. In the earliest decades of the nascent church, the apostle Paul finds himself in the position of having to pastor a Corinthian church that is unclear about the role of marriage and remarriage, especially after the resurrection of Jesus.²⁷ Paul ends up counseling widows not to remarry and virgins to remain so instead of spending time looking for suitable spouses. Surely the first Jewish converts to Christianity must have thought this advice was in direct violation of the “be fruitful and multiply” command they were taught as children. How could Paul conceivably encourage people not to follow this command? Paul tells those in the Corinthian church to forgo this command and dedicate themselves solely to kingdom work because Jesus is indeed the Messiah; a new time is upon them; the old rules no longer apply.

Later, in Christian history when christological statements and creeds came to formalize the understanding of Jesus as fully God and fully human, we came to new understandings of the human condition as well. As it applies to our present discussion, if Jesus is indeed the perfect embodiment of what it means to be human, then it is *not* necessary to be fruitful and multiply to be a faithful follower of God. One’s humanity is no longer defined by one’s progeny, but instead by one’s commitment to kingdom work. This is one more liberating component of the gospel message. Whether hampered by biology or chosen freely, one can be a disciple of Christ and not have children. The debate will undoubtedly continue as to whether the “be fruitful and multiply” command was necessary to get to the Messiah eventually or to propagate humans as a species, but it certainly is not necessary for each member of *Homo sapiens* to fulfill that command personally in order to be considered a faithful Christian. As one might imagine, this christological understanding could have could

have a similarly profound impact on Christians in the Anthropocene era as it did Christians in the first century.

NOAH'S ARK AND CLIMATE CHANGE

When assessing population and carrying capacity, Adlai Stevenson says that people should think of themselves as passengers on a spaceship.²⁸ Garrett Hardin instead opts for thinking of nations existing as lifeboats with wealthy and poor passengers competing for resources.²⁹ While the limited extent of the present discussion cannot evaluate these metaphors systematically, both metaphors are far too anthropocentric to be very helpful in the Anthropocene era. If climate change is teaching nothing else, it is that human beings are far more interdependent and interconnected with the rest of the planet and its creatures than many care to admit. Instead, Christians should turn to a biblical narrative that is far more illustrative when it comes to talking about the present issue than one might think at first glance. The story of Noah and his ark has been used to elucidate myriad theological points for thousands of years. In more recent years, it has even become the subject of a \$100 million theme park in the state of Kentucky in the United States with a replica ark that supposedly fits the dimensions laid out in the Genesis account.³⁰ While frequently distracted by questions about the historicity of the ark, American Protestants, unlike many Roman Catholics, have regrettably forgotten some of the deeper theological insights that the story communicates. Using the Noah's Ark narrative as theological inspiration, this paper proposes six insights that might have bearing on further discussions about population control in the age of climate change.

First, it is clear in the Noah narrative that versions of anthropocentrism that discount the significance of nonhuman creatures have no place in God's creative scheme. Creatures of all sorts, humans and otherwise, are part of God's floating conservation project. Humans do not pick who gets on the ark and who does not; Yahweh intentionally selects them and sends them to Noah and his family for their care. This is vastly unlike the current age when humans are ignorantly and willfully participating in the largest extinction event since the time of the dinosaurs.³¹ This again exemplifies a potent and rampant form of anthropocentrism that too often defines the human species. This kind of anthropocentrism should be viewed as extremely problematic for Christians of all sorts. For example, on the one hand, the Vatican condemns humanity's role in this extinction event in the strongest of terms, "Each year sees

the disappearance of thousands of plant and animal species which we will never know, which our children will never see, because they have been lost forever. Because of us, thousands of species will no longer give glory to God by their very existence, nor convey their message to us. We have no such right.”³² Francis even goes as far as to say, “Clearly, the Bible has no place for a tyrannical anthropocentrism unconcerned for other creatures.”³³ Yet, on the other hand, the Vatican implicitly supports a type of anthropocentrism while it affirms the dignity of the poor by placing human needs above those of other nonhuman creatures without guidance as to when nonhuman needs might legitimately outweigh those of humans. Instead, the Vatican, along with the rest of Christendom, must seek to defend “the least of these” who have no voice at all, i.e., nonhuman creatures and the rest of creation, too.

Second, while expecting the text to apply directly to the topic of carrying capacity would be fantastically anachronistic, the narrative can still inspire one to think theologically and imaginatively about the contemporary concern. In the framework of the story, the notion of carrying capacity is absolutely critical for Yahweh’s conservation project: too many creatures, human or otherwise, and the ark would sink; too little food for all of the creatures and Noah’s family would have a massive problem on their hands. The success of this effort would depend on having the correct amount of resources for the given population. In other words, the fair distribution of resources and population of both humans and nonhumans are intrinsically intertwined. However, one could reasonably argue that population concerns outweigh distribution concerns because people do not know how much stuff they will need until they know how many they may have. In the language of UNEP, the number of forks helps one understand what sort of manners are appropriate. One must recognize that for all the help UNEP gives on this issue, it too is portraying a form of anthropocentric thinking that is incredibly limited. What sort of manners people desire to exhibit must include how they will share the planet’s resources, not just with the rest of the human population, but the nonhuman one as well. This too is a lesson from Noah’s Ark.

Third, could the ratio of humans to nonhumans be theologically illustrative as well? On God’s boat, humans take a backseat, as it were, in volume to the great biodiversity of creation. While the primary thrust of the story is obviously the wickedness of humans that led to God restarting creation, God’s concern for nonhuman creatures bears noting. The lack of humans needed to allow creation to flourish once more should draw notice as well. One of the

theological points of the story is that Yahweh permits humans to pay the consequences of their actions. Humans are not somehow immune from the consequences of their sin because they are made in the divine image, as so many American Protestants tend to believe implicitly when discussing the effects of climate change. This story may also be illustrative if the effects of climate change end up causing a bottleneck phenomenon for the human population.³⁴ Additionally, this is another definitive blow to Christians who routinely cling desperately to a form of anthropocentrism that places human needs, and too routinely human wants, above the needs of others, especially nonhuman others. If anything, this story suggests a rather radical proposition: humans must serve the needs of nonhuman creatures, especially if creation is to flourish. Consequential sacrifice was demanded of Noah in order for the rest of the creatures in his care to make it through the flood event. This is one of the reasons we can echo the early Christian witness that deemed Noah to be a herald of righteousness.³⁵ Why should people expect anything less from themselves now in the age of climate change? In the current situation, this sort of sacrifice will entail not only better manners and inclusion of nonhuman creatures in one's deliberation of what sort of manners humans should be practicing, but significant consideration about fewer forks. Christians cannot be counted as righteous without thinking carefully and explicitly about how many children they might have in order for other members of creation to have the opportunity to flourish as well.

Fourth, when Noah, his family, and the rest of the creatures disembark for the dry land of Mount Ararat, Yahweh enters the Rainbow Covenant with Noah, his family, the nonhuman creatures from the ark, and the rest of creation. Yahweh commands all creatures to be fruitful and multiply to refill creation with the rich biodiversity that was present before the flood.³⁶ Unfortunately, far too many American Christians, especially Protestants, fail to ask the following question seriously: Does the rainbow covenant still apply today? As discussed already, humans are doing just fine fulfilling their obligation to this covenant. But, should nonhumans be allowed the opportunity to be fruitful and multiply, too? Pope Francis addresses this in forceful terms in his discussion about whether biodiversity should be factored into economic decision making.

Caring for ecosystems demands far-sightedness, since no one looking for quick and easy profit is truly interested in their preservation. But the cost of the damage caused by such selfish lack of concern is much greater than the economic benefits to be obtained. Where

certain species are destroyed or seriously harmed, the values involved are incalculable. We can be silent witnesses to terrible injustices if we think that we can obtain significant benefits by making the rest of humanity, present and future, pay the extremely high costs of environmental deterioration.³⁷

This raises one critical question going forward: Do humans have a responsibility to make sure that nonhumans can be fruitful and multiply, especially since we seem to be the only creatures who contribute so heavily to nonhumans' ability to flourish or go extinct? To this, Painter agrees wholeheartedly, "There is need to preserve the Earth itself that the Earth and all life on it may flourish together. It is not enough that humans find better ways to live with less destructive consequences for the planet. For the love of the world (Earth), ways need to be found to limit the growth of the human population, indeed to reduce the overall population. Humans now live at the expense of the survival of other species."³⁸ Pope Francis agrees, too, even if he leaves the details of economic decision making and public policy formation to others. The question, however, that Roman Catholics and most other Protestants fail to consider seriously is whether or not humans themselves must control their own population to allow nonhumans the chance to be fruitful and multiply.

Fifth, the Genesis writer tells us that Noah was chosen to captain Yahweh's conversation project because he was "a righteous man, blameless in his generation."³⁹ Again, while the primary theological point of the story is indubitably that Noah's character stands in primary juxtaposition to the great wickedness of the rest of humanity,⁴⁰ I believe we can draw more from Yahweh's choice if we engage in a bit of theological imagination. It was not just Noah's blamelessness that was part of Yahweh's selection process. As a human who is called to "subdue" and have "dominion" over the earth, the choosing of Noah to pilot the ark reminds us that humans alone have evolved the rational, creative, and moral capacities to act as God's representatives on earth. As one Christian thinker puts it, humans alone have the ability to see "the created world whole."⁴¹ In other words, humans alone can think through the complicated dilemma of how human population affects the rest of the planet or how carrying capacity impacts the least of these, both human and nonhuman. And yet, they consistently abdicate this responsibility in order to practice anthropocentric behavior that has led to climate change as they presently experience it and will continue to exacerbate it dramatically into the future. Another important way of seeing the "whole" is seeing into the future, as it were, and

imagining the needs of future generations of human beings, at least. It is difficult to imagine how the “love your neighbor as yourself” ethic how should not apply to future generations, especially as they find themselves in the Anthropocene era. Humans have no inherent reason to believe that they are not called to love their future neighbor. In this case, Pope Francis could not agree more. “Intergenerational solidarity is not optional, but rather a basic question of justice, since the world we have received also belongs to those who will follow us.”⁴²

Finally, while technology can undoubtedly contribute to easing some of the resource distribution issues and thus possibly raise the standards of living for humans across the planet, the Noah narrative offers a significant critique of the “bigger pie” solution that is so extremely popular in Western culture. In very important ways, the actions of Noah and his family stand in direct contradistinction to those in the Tower of Babel story. While on the great plain of Shinar, humans use technology to make a name for themselves in opposition to the divine mandate (ironically, to be fruitful and multiply), Noah builds the ark following God’s mandate precisely. Noah does not seek to make a name for himself, but through his obedience honors the Creator by being a good creature and for this too he is recognized as righteous. The ark represents technology that serves not only the needs of Noah and his family but those of the nonhuman creatures that will be saved also. More importantly, however, Michael Northcott contends, “Against...theological and technological hubris, the Noah saga suggests that turning away from the ecologically destructive path on which humanity is headed requires humility and a preparedness to change direction in response to the clear signs of impending danger.”⁴³ This teaches us that while technology has its place, self-examination and behavior change are far more crucial in avoiding disaster.⁴⁴ In other words, we cannot allow the desire of a bigger pie solution, which does nothing to address the promulgation of unfair distribution schemes that benefit the wealthy while disenfranchising the poor, to cause us to neglect sincere deliberation about fewer forks *and* better manners.

CONCLUSION

It is undeniably easy to fall into despair when listening to scientists talk about critical tipping points and extinction brought on by climate change. Any additional discussion about human population control only seems to make a dreary topic even more dismal. Some thinkers, especially those who deny the present and future consequences of climate change, argue naively that human population

growth should never be a significant concern. “[S]ome people still fear population growth. Their fears, however, lack both biblical and empirical bases. First, the Bible presents human multiplication as a blessing, not a curse...in contrast, a decline in population was one form of curse God might bring on a rebellious people...”⁴⁵ As discussed above, this sort of theological interpretation was done away early on in Christian history when Jesus was recognized to be the Messiah. Pope Benedict, however, provides a more sophisticated response as he questions whether nations that have encouraged its citizens to have smaller families are concerned too much about population growth and thus are beginning to succumb to unforeseen consequences, and eventually distress. “These situations are symptomatic of scant confidence in the future and moral weariness.”⁴⁶

Painter contends positions like these do not recognize our present crisis for what it truly is. It is necessary for human sexuality to be rethought in order to maintain biodiversity and strengthen the fragile web of life. Religious authorities who continue to urge believers to “be fruitful and multiply and fill the Earth and subdue it” are irresponsibly ignoring the present situation, which brings a new perspective to bear on the old mandate. Human sexuality finds expression in a deep and abiding human love as a basis of community or family. Procreation, and the birth of children in the context of a loving relationship remain important, but within the limits that allow other species to flourish. Only then will there be a rich and diverse Earth life for one’s children and children’s children.⁴⁷

It is intellectually lazy to dismiss Painter as merely someone who has lost confidence in the future or has become morally weary. Ice sheets are melting, deserts are expanding, and thousands of species are going extinct right now. That does not even consider the hundreds of millions of climate refugees who will be migrating by the end of this century.⁴⁸ The only way to have any confidence in a future within the Anthropocene era is precisely to have a thorough conversation about the link between human population, the Earth’s carrying capacity, and how that affects both the human and nonhuman least of these.

One possible way to make this topic more palatable to all sorts of Christians may be to start with a cue from the current occupant of the papal seat. Pope Francis laments that the type of environmental education pervading much of Western culture is not creating the sort of ecological citizens that are desperately need because it focuses too much on information

delivery and not enough on virtue formation.⁴⁹ He is correct. “Our efforts at education will be inadequate and ineffectual unless we strive to promote a new way of thinking about human beings, life, society and our relationship with nature.”⁵⁰ He exhorts his parishioners to an ecological conversion, “whereby the effects of their encounter with Jesus Christ become evident in their relationship with the world around them. Living our vocation to be protectors of God’s handiwork is essential to a life of virtue; it is not an optional or a secondary aspect of our Christian experience.”⁵¹ He goes on to say, “First, it entails gratitude and gratuitousness, a recognition that the world is God’s loving gift, and that we are called quietly to imitate his generosity in self-sacrifice and good works...It also entails a loving awareness that we are not disconnected from the rest of creatures, but joined in a splendid universal communion.”⁵² Again, the author agrees emphatically with the Pope in his call for this kind of ecological conversion, especially as it might prompt the emergence of non-anthropocentric ways of thinking promoted in the Noah’s ark story.

Christians need an ecological education curriculum though that does not skirt critical questions that have drastically been sharpened while living in the Anthropocene era. In conclusion, three items must be included in this curriculum. First, ecologically converted Christians must consistently question forms of anthropocentric thinking that blatantly prize human needs, and especially wants, above those of nonhumans and the rest of creation. The luxurious lives of the elite minority of the planet, many of whom are citizens of the global north, not only disenfranchise much of the rest of the world’s human population but also fundamentally accelerate the Earth’s sixth great extinction. Limiting the harm humans have already caused, not to mention any possible restoration of ecosystems and species in the future, will take the sort of sacrifice characterized by Noah that might allow people eventually to be called righteous as well. As the only species that appears to be able to see creation whole, humans must constantly ask what their responsibility is in light of this ability, particularly if intergenerational solidarity is to mean anything but an abstract ideal.

Second, ecologically converted Christians must more carefully and explicitly analyze the intrinsic link between human population and the distribution of resources rather than prioritize one to the detriment of the other. No matter how noble it is for the Vatican to emphasize the problem of maldistribution in its continued effort to seek justice for the poor, it is no longer a problem distinct from our ever-increasing human population, if it ever was.

As noted in the discussion of the Noah story, the amount of stuff that needs to be shared is always dependent upon how many people and creatures with whom they need to share. That said, one must not only acknowledge the intrinsic link between human population and the distribution of resources but the flourishing of biodiversity, too. Biodiversity can only continue to exist if humans decide that it is vital for other creatures and ecosystems to flourish. It is only at that point that the discussion about how many children we should have will be consequential.

Third, ecologically converted Christians must think through how their understanding of Jesus's humanity, particularly his lack of progeny, might apply to the Anthropocene era. If their identity is defined by kingdom work, then the question of how many children they should have, if any, living in the age of climate change is more noteworthy than ever. Moreover, if they apply one of the lessons of the Noah narrative, they can ask boldly: Do some Christians have a responsibility to sacrifice their desire to have multiple children, or children at all, for other humans and nonhumans to have the chance to flourish? This form of self-sacrifice would both demonstrate the inadequacies of dangerous strands of anthropocentrism and establish new ways of righteous living.

We are living in an era where it is difficult daily after reading the newspaper or watching the local news on television to have confidence in the future. It would be naive at least, if not outright self-destructive, to be confident about the future in the Anthropocene era without soberly considering the issue of human population control. Intergenerational solidarity with the poor and dispossessed now and in the future depends upon it. Any sense of biodiversity after the sixth great extinction of the planet hinges on it. Otherwise, one may have to ask those folks in Kentucky to build a bigger ark.

ENDNOTES

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