



## The Future of the Creation: The Central Challenge for Theologians

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All is not well with the creation.<sup>1</sup>

There are many symptoms. While millions are starving in Africa, American farmers are paid not to grow food. An epidemic of cancer, thought to be caused by chemical wastes, rages through the fish populations of many U.S. rivers. Some alienated individual kills random strangers by putting cyanide in Tylenol capsules.

Underlying these symptoms is a host of interrelated problems—poverty, injustice, environmental pollution, population growth, destruction and depletion of resources, fear, hatred, insecurity, greed, and much more. But even these “problems” are not the root cause.

At the very root, the difficulty facing the creation is that the vision of the future that has been guiding human affairs has failed, and no viable alternative has emerged.

Herein lies an opportunity and a challenge for theologians: to help formulate a viable vision of the future of the creation. With such a vision, the church<sup>2</sup> has an opportunity to provide powerful and urgently needed leadership. Without such a vision, the church will become increasingly irrelevant to a creation moving rapidly toward disaster.

### I. THE CREATION: 1984 AND BEYOND

Over the past decade there have been several studies of the future of the creation.<sup>3</sup> In virtually every case, these studies have accepted or assumed the vision that has for decades shaped the human future: prosperity through development, and security through violence, or at least the threat of violence. Collective-

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<sup>1</sup>“Creation” is used here in a limited sense, synonymous with “Earth,” including its human and nonhuman living populations, and its nonliving parts.

<sup>2</sup>The word “church” is used here to mean the whole collection of incorporated and unincorporated organizations that attempt to make visible the real (invisible) church (“body of Christ”).

<sup>3</sup>For an introduction to these studies see the two survey articles by John Richardson published in *Futures* 10/5 (October, 1978) 388-404 and *Futures* 10/6 (December, 1978) 476-91; D. Meadow, J. Richardson, and G. Bruckmann, *Groping in the Dark* (New York: Wiley, 1982); and Office of Technology Assessment, *Global Models, World Futures, and Public Policy: A Critique* (Washington, D.C.: U.S. Government Printing Office, 1982).

ly these studies demonstrate that this vision of the future has failed because development—as now understood—is not sustainable, and violence threatens literally to destroy the creation.

#### *A. Prosperity, fertility, and the sustainability problem.*

People seeking to be prosperous make demands on the nonhuman parts of creation—the

rest of creation. The essence of the sustainability problem is that there are limits to the human demands that can be sustained by the rest of creation. In other words, there is an inherent tension or conflict between the biblical injunction to “be fruitful, multiply and fill the earth” (Gen 1:28) and to “cultivate and take care of it” (Gen 2:15).

In localized situations, the sustainability problem is not new. Lot and Abraham, for example, discovered that in their numbers at their standard of prosperity “the land was not sufficient to accommodate them both” (Gen 13:6). The resulting “dispute” was resolved by migration; Lot moved to the well-irrigated Jordan plain.

What is new about the sustainability problem is that Lot’s solution is no longer open; there are no more “Jordan plains” into which to migrate. From its localized beginnings, the sustainability problem has become global in extent.

The process of “development” has long seemed to be the only global solution to the sustainability problem. Through “development” it has been thought possible to make the developing countries like the developed ones, e.g., having high standards of living and stable (or at most slowly growing) populations. The developed countries achieved their current circumstances through two interrelated phenomena, industrialization and a demographic transition. It is now doubtful that the “developing” countries can experience industrialization and a demographic transition anything like what occurred in the developed nations.

The high standards of living achieved in the developed nations were accomplished in large part through the invention and application of technologies for using energy (first coal and later petroleum) and capital to replace human labor and to increase production. As production increased, capital (machines, roads, buildings, railroads, etc.) accumulated, permitting still more use of energy per capita, a higher standard of living, yet more capital accumulation, education, and research. Abundant, inexpensive energy—especially petroleum—was essential to industrialization.

Unfortunately, neither petroleum nor any other comparably abundant, inexpensive, clean energy source will be available to make development possible in the developing countries. At the beginning of the industrial revolution, the world had about 2,000 billion barrels of oil. A quarter has now been burned by the industrialized nations. By about the turn of the century, roughly half will have been burned (80 percent by the industrialized nations), and oil production will be on the decline.

Depletion of the world’s petroleum resources is not a serious problem if some other abundant, clean, inexpensive energy source will take its place. Unfortunately, no such energy source is in sight. Recent analysis by the Department of Energy show that, in spite of contributions from all anticipated technological advancements and competition from all other sources of energy, world

petroleum prices (and the prices of other energy forms in equivalent quantities and qualities) will rise to \$40-\$80 per barrel (in 1982 dollars) by the turn of the century.<sup>4</sup>

The effect of high energy prices is particularly devastating for the agricultural sector, which is critical for development. Modern “green revolution” agriculture is no longer a way of converting solar energy into food calories, but rather a means of using solar energy to transmute fossil fuels into food calories. Roughly, three calories of fossil fuels are now required to produce

a single calorie of food energy in the form of grain. If the food calories are in the form of grain-fed beef, as much as 15 calories of fossil fuels are needed.

The food prospects for the poorest countries are not good. The latest global food projections for the year 2000, available from the U.S. Department of Agriculture, show food consumption (assuming neither drought nor massive food aid) falling 20 percent below the FAO minimum standard in large parts of Africa.<sup>5</sup> At this level, adults are unable to carry on normal work functions, and children cannot be expected to achieve their normal physical and mental capabilities. The problem is that even now these countries cannot afford fossil fuels either before or after they are transmuted into food, and as energy prices increase, their prospects will become still more difficult.

In short, at the high prices of energy now expected, industrialization and energy-intensive agriculture are not options for the poorest nations. The industrial economies of the world were built with energy that cost about \$10 per barrel (1982 dollars). If in the future energy should cost perhaps 10, 20, or even 30 percent more, development based on Western industrialization might be an option, but with energy to cost 4 to 8 times more, development based on the substitution of energy and capital for human labor is simply not a possibility for the poorest countries.

The altered energy and development prospects have major implications for efforts to stabilize the world population. During and after the industrial revolution, mortality rates in the now-industrialized nations declined. A decade or so later, desired family sizes dropped and fertility rates declined. Populations grew rapidly for a time, and then stabilized. In this way the industrialized nations made a demographic transition from high birth rates and high mortality rates to low birth and mortality rates.

It has long been assumed that a similar demographic transition would automatically follow industrialization in the developing countries. The experience of some of the newly industrialized nations (e.g., Taiwan and South Korea) encouraged this hope.

Unfortunately, however, the vast majority of the poorest developing countries are making little or no progress in stabilizing their populations. Medical technology has reduced mortality rates, but fertility rates often remain high. The World Bank reports that the population growth rate of the poorest 34

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<sup>4</sup>U.S. Department of Energy, *Energy Projections to the Year 2010* (Washington, D.C.: U.S. Government Printing Office, 1983); and U.S. Department of Energy, *1982 Annual Energy Outlook* (Washington, D.C.: U.S. Government Printing Office, 1983).

<sup>5</sup>G. O. Barney, Study Director, *The Global 2000 Report to the President* (3 vols.; Washington, D.C.: U.S. Government Printing Office, 1980) 1.41 and 2.73-104, 272-297.

nations (less China and India) *increased* from 2.5 percent in the 1960s to 2.6 percent in the 1970s, and the Bank now expects the growth rate for more than half of the low- and middle-income countries to increase to 2.9 percent for the 1980-2000 period. At best, the populations of the developing countries will not stop growing for another century.<sup>6</sup>

Population growth cannot go on forever. There is a limit to the number of humans that the rest of creation can support. This "carrying capacity" has been estimated by the U.S. National Academy of Sciences to be somewhere between 10 and 30 billion people.<sup>7</sup>

Human numbers are rapidly approaching the Academy's estimate of the carrying capacity.

The human population stands today at about 4.5 billion, and each year it sets a new record increase. By the turn of the century the percentage growth is expected to decline from the current 1.8 percent per year to perhaps 1.6 percent, but the annual increment to the human number will jump from the current 75 million to 100 million. Short of some major unforeseen developments, the human population will reach 6 billion before children born today graduate from high school. (This increase is the equivalent of adding another China—and then some—to today’s population.) Many alive today might live to see the 10 billion mark reached.

As the carrying capacity of the creation is approached, a number of unpleasant developments must be expected. In the poorest countries, the carrying capacity will actually be eroded or destroyed. Already in many of the poorest nations, overgrazing combined with fuelwood gathering and burning of dung for fuel is stripping all the vegetation from arid areas, and deserts are expanding. In the steep tropical areas of South and Southeast Asia, forests are being removed for slash-and-burn agriculture and for fuelwood arid charcoal production. Soon thereafter the thin soils erode to leave a seriously degraded land. In such situations, the limited food, shelter, clothing, and medical care keep infant mortality rates high, leading parents to want still more children to make up for those they expect will die in infancy.<sup>8</sup>

The affluence of the industrialized nations will have equal or greater impacts. As domestic petroleum resources are depleted in the industrialized nations, competition for foreign sources will grow. Ultimately about 80 percent of the world’s total supply of petroleum is likely to be burned by the industrialized nations. The carbon dioxide produced from burning petroleum (and coal) has already significantly altered the global atmosphere and within the next generation is likely to change the global temperature and precipitation patterns enough to disrupt agriculture world-wide and to increase ocean levels several feet, flooding urban, industrial and agricultural areas around the world.<sup>9</sup>

As these unpleasant developments occur, tensions and disputes—not

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<sup>6</sup>World Bank, *World Development Report* 1983 (Oxford: Oxford University, 1983); A. J. Coale, “Recent Trends in Fertility in Less Developed Countries,” *Science* 221 (26 August, 1983) 829.

<sup>7</sup>National Research Council, National Academy of Sciences, *Resources and Man* (San Francisco: Freeman, 1969) 5.

<sup>8</sup>G. O. Barney, *The Global 2000 Report*, 2.390-430.

<sup>9</sup>National Research Council, National Academy of Sciences, *Changing Climate* (Washington, D.C.: National Academy Press, 1983); S. Seidell and D. Keyes, *Can We Delay a Greenhouse Warming?* (Washington, D.C.: Environmental Protection Agency, September, 1983).

unlike those experienced by Lot and Abram—can be expected. The means used to resolve tensions and conflicts can therefore be expected to become increasingly important.

### B. *The violence problem.*

The first biblical example of conflict resolution is a violent one—a jealous Cain killing his brother Abel. In most cultures murder is now regarded as an unacceptable means of conflict resolution, but among large groups of people (nations), organized murder (war) is still very much accepted as a last-resort means of conflict resolution.

Given the assumption that ultimately a nation’s “security” depends on its ability to wage war, it is not surprising that nations have pursued every opportunity to increase their capacity to

do violence. Acceptance of this notion of security is the fundamental force powering the arms race.

The notion that security can be derived from violence has failed. The search for ever more destructive weapons has led from the stones that Cain might have used to nuclear weapons. For a few decades after their invention and first use by the United States, it was argued that nuclear weapons provided security through the “deterrence” produced by “mutually assured destruction.” It is now apparent that the use of nuclear weapons in even an unanswered first strike is, in fact, suicide.

Recently a large group of scientists from the U.S. and the U.S.S.R. analyzed the consequences of exploding various fractions of the world’s current 12,000 megaton (MT) nuclear arsenal—the equivalent of 1 million Hiroshima-sized bombs. They concluded that a moderate to large nuclear exchange would kill outright up to a quarter of the world’s population. An equal number would suffer serious injuries requiring immediate medical attention—which would be largely unavailable.<sup>10</sup>

The long-term consequences would be even more serious. Within a week, the amount of sunlight at ground level could be reduced to just a few percent of normal over the entire planet.<sup>11</sup> The unbroken gloom would last for months. Land temperatures would go to subfreezing levels for months. Even if the exchange were to occur in the summer, many areas might be subject to continuous snowfall for months. Major climatic changes would occur and last for years.

A nuclear exchange would leave survivors facing extreme cold, hunger, water shortages, and pollution—all in twilight or darkness and largely without the support of organized society. The environment that would confront most human beings and other organisms would be so altered, and so malign, that extreme and widespread damage to living systems would be unavoidable. Most plants would die from lack of light and the extreme cold. Most animals would

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<sup>10</sup>R. P. Turco, et al., “Nuclear Winter: Global Consequences of Multiple Nuclear Explosives,” and P. R. Ehrlich, “Long-term Biological Consequences of Nuclear War,” *Science* 222 (23 December, 1983) 1283-92 and 1293-1304; “Three Minutes to Midnight,” *Bulletin of the Atomic Scientists* 40 (January, 1984) 2.

<sup>11</sup>Unlike previous studies, the new analysis shows large disturbances in the global circulation patterns which could accelerate the transport of smoke, dust, and radioactivity to the Southern Hemisphere, and involve the entire planet in the aftereffects.

soon die from lack of water and food, and any that survived until the skies began to clear would be blinded by increased ultraviolet light and unable to find what little food might remain.

These findings make clear that a nuclear exchange—or even an unanswered first strike—could end human civilization.

## II. THE FAILED VISION AND THE CHALLENGE TO THEOLOGIANs

The great vision guiding human affairs—prosperity through industrial development and a demographic transition, and security through violence (or the threat of violence)—has failed. It is no longer possible to pretend that all peoples can achieve prosperity through development styled after the industrialized nations: the resources—especially inexpensive, environmentally benign energy sources—and the capital are not sufficient. Furthermore, no technology is in sight that would allow even the present world population to live sustainably while making the per capita

demands on the world's resources and environment that people living in the industrialized nations do. Similarly, it is no longer defensible to pretend that violence (or the threat of violence) produces security. Living in a state of "mutually assured destruction" is not peace. Possessing weapons capable of destroying all human civilization—including one's own—provides neither comfort nor defense.

Is there hope? Perhaps. There is no question that the creation was designed in such a way that it could go on a good while longer. What threatens it is not the result of the design of the creation, but rather the result of human behavior, human will. There is hope, therefore, if humans—all of us—can change.

Can humans change? This is at least in part a theological question, and I am not encouraged by what I often hear from the pulpit: "Humans exist in a sinful world. What each person should do is prepare for judgment day by accepting God's grace. Then, be a good steward of your time, talent and treasure.<sup>12</sup> Do what little good you can individually in the world, but forget about putting the world right. We humans are in bondage to sin and cannot free ourselves."<sup>13</sup>

While not a theologian, I have difficulty reconciling this message with what Paul wrote to the Romans:

Does it follow that we should remain in sin...? Of course not. We are dead to sin, so how can we continue to live in it? You have been taught that when we were baptized in Christ Jesus we were baptized in his death; in other words when we were baptized we went into the tomb with him and joined him in death so that as Christ was raised from the dead by the Father's glory, we too might live a new life. (Rom 6:1-4)

Paul, it seems, is saying that post-resurrection things are different. We are no longer in bondage to sin; the creation is no longer hopelessly condemned to continue "groaning" (Rom 8:22). There are no longer inherent limits to goodness, and the task of the post-resurrection "body of Christ" is to get on with the "new life."

<sup>12</sup>Judging by the examples usually given, this means usher, sing in the choir, evangelize, proselytize, teach Sunday School, and give money to God's work, i.e., to the local parish.

<sup>13</sup>This last point is actually "confessed" weekly by my own denomination.

Given the threats to the creation that exist today, *the* central challenge for theologians is to resolve this question: Is a creation-wide "new life"—a profound change in human behavior—theoretically possible? Do the events remembered on Good Friday and Easter offer hope for the whole creation as well as the individual? Or are we collectively still in bondage to sin, and the creation condemned to continue groaning?

If theologians can answer affirmatively that a "new life" offers hope for the creation as well as the individual, then the church had best get serious about its work. Again, the primary challenge is to the theologians. How was the creation supposed to have worked before sin? How *could* it work post-resurrection? What is possible for the creation in the "new life"? What vision can the church offer to replace the vision that has failed?<sup>14</sup>

In defining a new vision, theologians must deal directly with the sustainability issue—the modern, global version of the problem faced by Lot and Abram. Currently one of the most serious threats to the creation is the failure of the church to comprehend the conflict between human fruitfulness and the necessity to cultivate and take care of the creation.<sup>15</sup> To address this issue theologians will need to learn much more about the creation, technology, and science—especially biological science.<sup>16</sup>

The new vision will also require theologians to deal with the problem of violence and conflict resolution. Some thought has already been given to these matters in the Christian theory of the just war. This theory holds that there are conditions under which Christians may join in the mass taking of life that nation-states employ as a means of conflict resolution when a nation-state's "vital interests" and "national security" are thought at risk. This theory needs

<sup>14</sup>For an introduction to some of the thinking already in progress on what might be a viable new vision, see the various *Riverdale Papers* by Thomas Berry (Riverdale Center for Religious Research, Riverdale, New York 10471); *World Faiths and the New World Order*, ed. J. Gremillion and W. Ryan (Washington, D.C.: Interreligious Peace Colloquium, 1978); O. W. Markley and W. W. Harman, *Changing Images of Man* (Oxford: Pergamon, 1982); Science Council of Canada, *Canada as a Conserver Society* (Hull: Printing and Publishing, 1977); W. W. Harman, *An Incomplete Guide to the Future* (Stanford: Stanford Alumni Association, 1976); W. E. Diehl, *Thank God, It's Monday!* (Philadelphia: Fortress, 1982); E. F. Schumacher, "Buddhist Economics," *Small is Beautiful* (New York: Harper & Row, 1973) 50-58; *The Report from Iron Mountain: On the Possibility and Desirability of Peace* (New York: Dial, 1967); L. R. Brown, *Building a Sustainable Society* (New York: Norton, 1981); L. R. Brown, *The State of the World 1984* (New York: Norton, 1984); W. I. Thompson, *Passages About Earth* (New York: Harper & Row, 1981); W. Brandt, *North-South: A Programme for Survival* (Cambridge: MIT, 1980); R. E. Miles, Jr., *Awakening from the American Dream* (New York: Universe Books, 1977); G. Snyder, *Turtle Island* (New York: New Directions, 1974); R. Reines, J. Todd, I. McHarg, P. Soleri, R. S. Wurman, *What Do We Use for Lifeboats When the Ship Goes Down?* (New York: Harper & Row, 1976); G. Vickers, *Freedom in a Rocking Boat* (Baltimore: Pelican Book, 1972); W. Berry, *The Unsettling of America* (San Francisco: Sierra Club Books, 1977); J. Schell, "Reflections (Nuclear War—Abolition and Deliberate Policy)," *The New Yorker* (January 2 and January 9, 1984); Carl Sagan, "Nuclear War and Climatic Catastrophy: Some Policy Implications," *Foreign Affairs* 62/2 (Winter, 1983-84) 257-292.

<sup>15</sup>As but one example of this failure, my own denomination recently went through years of committee work to produce a new hymnal that contains not one hymn concerned with the human responsibility for tilling and keeping and for human fertility. And it will be at least a decade before the committees begin on the next hymnal.

<sup>16</sup>J. C. Fletcher, "Internationalizing Theological Education," *The Futures of Protestant Seminaries* (Washington, D.C.: The Alban Institute, 1983); Committee on Science and Creationism, National Academy of Sciences, *Science and Creationism* (Washington, D.C.: National Academy Press, 1984).

urgent reconsideration in light of what is now known about the long-term global consequences of nuclear war, and some limited progress in this direction has been made.<sup>17</sup> In addition, the revised theory needs to be applied openly and regularly to real wars. Is one to assume that all of the 40-odd wars in progress now are just?

But the new vision needs to go far beyond the issues of war to address other forms of violence. Virtually every nation engages in more subtle forms of violence, in ruthless, unjust, conflict-producing acts—exploitation through currency manipulation and trade barriers, assassination of political leaders, bribing officials, torture, terrorism, covert military attacks, spying, spreading half-truths and outright lies, etc. Corporations, in the name of market competition, engage in practices that are not unrelated. Since Christians are called upon to be

directly involved in these acts, the new vision needs to include a theological theory of just competition, complete with guidance as to when Christians may feel justified in forms of violence that fall somewhat short of war but that could provoke war.

Theologians must also examine the role Christianity has in creating tensions and war. The hostility of Christians to people of other faiths is a serious problem for the creation. As but one example, Christian abuses of Muslims (including the massacres at Sabra and Chatila) are a fundamental cause of the war in Lebanon. Similarly, the church has on more than one occasion contributed enormously to injustice. The ongoing exploitation and corruption by parts of the church in Latin America are one example and a contributing cause of the conflict there.

Theologians must also think about the conflicts that they themselves produce. The “body of Christ” has been badly divided by theologians in dispute over issues that without question are beyond human comprehension or are legitimately open to different interpretations. It seems to me that more than one theologian has in effect raised idolatry to a new standard by allowing a pet notion—not even a graven image—to assume paramount importance and command total devotion. Unnecessary divisions are all counterproductive and some disastrous. While British policy is also a factor, it is hard to imagine a more appalling Christian witness than the ongoing war in Northern Ireland.

The creation stands threatened today. At any time nuclear weapons could destroy the creation in minutes. Within a single generation, our unsustainable and unjust vision of development could do ecological damage that would approach that of a modest nuclear war. Destruction of the creation by nuclear war or by unsustainable management of human fertility and human demands would be a human failure of the ultimate proportions.

The human vision has failed. Without a new vision that recognizes the potential in the creation’s design there is no hope. Without hope there is no peace.

The challenge and opportunity to theologians is enormous. It is not to preach “peace, peace” when there is no peace, but rather to bring first a new vision, then hope, and finally peace to a troubled creation.

<sup>17</sup>U.S. Catholic Bishops’ Pastoral Letter on War and Peace, “The Challenges of Peace: God’s Challenge and our Response,” *Origins* 13/1 (May 19, 1983).