responsibility by the malnourished themselves. He combines the right to adequate food with a variety of other civil and political rights which facilitate political participation and economic action. The virtue of this approach is its flexibility to deal with changing circumstances, and with both individuals' and institutional failures.

The fourth unit, Justice and Development, emphasizes the point so effectively established in the work of economist Amartya Sen, that it is poverty, not a shortage of food, which causes starvation. In his 1983 essay "Goods and People," he argues that hunger and starvation depend on the nature of the entitlement system operating in the economy in question and the ability of individuals within that system to command entitlements to food and to complementary goods and services such as health services and education. Abolishing hunger is linked to insuring these entitlements and thereby expanding peoples' capabilities. Adopting Sen's capabilities approach to development, David Crocker argues in "Hunger, Capability, and Development" that the predominant "ethics of aid" evoked by most moral philosophers should be replaced with an "ethics of development." This latter approach widens and reframes the questions of world hunger and moral responsibility to focus on the prevention of persistent malnutrition and the integration of food entitlements into a capabilities-based model of development. Radhika Balakrishnan and Uma Narayan similarly criticize the popular western moral discourse on world hunger. In "Combining Justice with Development: Rethinking Rights and Responsibilities in the Context of World Hunger and Poverty," they stress the role of past and current economic policies in creating poverty and resilient hunger. They dispute the attempt to explain chronic poverty by blaming poor women for overpopulation; they also chronicle the costs of current market-driven development policies to women. Elimination of hunger and poverty is a matter of social and international justice, not charity.

The sole essay in the final unit, Hunger and the Environment, Holmes Rolston's "Feeding People versus Saving Nature?" explores the question: can we ever say that we should save nature rather than feed people? He argues that given the complexity created by many factors such as unsustainable consumption, maldistribution of wealth, and exploding human populations, sometimes we ought to preserve natural values—like endangered species and tropical rain forest biodiversity—even if it might cost human lives because of hunger through the omission of development.

I. LIFEBOAT ETHICS

Lifeboat Ethics
The Case Against Helping the Poor*

GARRETT HARDIN

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Environmentalists use the metaphor of the earth as a "spaceship" in trying to persuade countries, industries, and people to stop wasting and polluting our natural resources. Since we all share life on this planet, they argue, no single person or institution has the right to destroy, waste, or use more than a fair share of its resources.

But does everyone on earth have an equal right to an equal share of its resources? The spaceship metaphor can be dangerous when used by misguided idealists to justify suicidal policies for sharing our resources through uncontrolled immigration and foreign aid. In their enthusiastic but unrealistic generosity, they confuse the ethics of a spaceship with those of a lifeboat.

A true spaceship would have to be under the control of a captain, since no ship could possibly survive if its course were determined by committee. Spaceship Earth certainly has no captain: the United Nations is merely a toothless tiger, with little power to enforce any policy on its bickering members.

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If we divide the world crudely into rich nations and poor nations, two thirds of them are desperately poor, and only one third comparatively rich, with the United States the wealthiest of all. Metaphorically each rich nation can be seen as a lifeboat full of comparatively rich people. In the ocean outside each lifeboat swim the poor of the world, who would like to get in, or at least to share some of the wealth. What should the lifeboat passengers do?

First, we must recognize the limited capacity of any lifeboat. For example, a nation’s land has a limited capacity to support a population and as the current energy crisis has shown us, in some ways we have already exceeded the carrying capacity of our land.

Adrift in a Moral Sea

So here we sit, say fifty people in our lifeboat. To be generous, let us assume it has room for ten more, making a total capacity of sixty. Suppose the fifty of us in the lifeboat see 100 others swimming in the water outside, begging for admission to our boat or for handouts. We have several options: we may be tempted to try to live by the Christian ideal of being “our brother’s keeper,” or by the Marxist ideal of “to each according to his needs.” Since the needs of all in the water are the same, and since they can all be seen as “our brothers,” we could take them all into our boat, making a total of 150 in a boat designed for sixty. The boat swamps, everyone drowns. Complete justice, complete catastrophe.

Since the boat has an unused excess capacity of ten more passengers, we could admit just ten more to it. But which ten do we let in? How do we choose? Do we pick the best ten, the neediest ten, “first come, first served”? And what do we say to the ninety we exclude? If we do let an extra ten into our lifeboat, we will have lost our “safety factor,” an engineering principle of critical importance. For example, if we don’t leave room for excess capacity as a safety factor in our country’s agriculture, a new plant disease or a bad change in the weather could have disastrous consequences.

Suppose we decide to preserve our small safety factor and admit no more to the lifeboat. Our survival is then possible, although we shall have to be constantly on guard against boarding parties.

While this last solution clearly offers the only means of our survival, it is morally abhorrent to many people. Some say they feel guilty about their good luck. My reply is simple: “Get out and yield your place to others.” This may solve the problem of the guilt-ridden person’s conscience, but it does not change the ethics of the lifeboat. The needy person to whom the guilt-ridden person yields his place will not himself feel guilty about his good luck. If he did, he would not climb aboard. The net result of conscience-stricken people giving up their unjustly held seats is the elimination of that sort of conscience from the lifeboat.

This is the basic metaphor within which we must work out our solutions. Let us now enrich the image, step-by-step, with substantive additions from the real world, a world that must solve real and pressing problems of overpopulation and hunger.

The harsh ethics of the lifeboat become even harsher when we consider the reproductive differences between the rich nations and the poor nations. The people inside the lifeboats are doubling in numbers every 87 years; those swimming around outside are doubling, on the average, every 35 years, more than twice as fast as the rich. And since the world’s resources are dwindling, the difference in prosperity between the rich and the poor can only increase.

As of 1973, the United States had a population of 210 million people, who were increasing by 0.8 percent per year. Outside our lifeboat; let us imagine another 210 million people, (say the combined populations of Colombia, Ecuador, Venezuela, Morocco, Pakistan, Thailand, and the Philippines) who are increasing at a rate of 3.3 percent per year. Put differently, the doubling time for this aggregate population is 21 years, compared to 87 years for the United States.

Multiplying the Rich and the Poor

Now suppose the United States agreed to pool its resources with those seven countries, with everyone receiving an equal share. Initially, the ratio of Americans to non-Americans in this model would be one-to-one. But consider what the ratio would be after 87 years, by which time the Americans would have doubled to a population of 420 million. By then, doubling every twenty-one years, the other group would have swollen to 354 billion. Each American would have to share the available resources with more than eight people.

But, one could argue, this discussion assumes that current population trends will continue, and they may not. Quite so. Most likely the rate of population increase will decline much faster in the United States than it will in the other countries, and there does not seem to be much we can do about it. In sharing with “each according to his needs,” we must recognize that needs are determined by population size, which is determined by the rate of reproduction, which at present is regarded as a sovereign right of every nation, poor or not. This being so, the philanthropic load created by the sharing ethic of the spaceship can only increase.
The Tragedy of the Commons

The fundamental error of spaceship ethics, and the sharing it requires, is that it leads to what I call "the tragedy of the commons." Under a system of private property, the men who own property recognize their responsibility to care for it, for if they don't they will eventually suffer. A farmer, for instance, will allow no more cattle in a pasture than its carrying capacity justifies. If he overloads it, erosion sets in, weeds take over, and he loses the use of the pasture.

If a pasture becomes a commons open to all, the right of each to use it may not be matched by a corresponding responsibility to protect it. Asking everyone to use it with discretion will hardly do, for the considerate herdsman who refrains from overloading the commons suffers more than a selfish one who says his needs are greater. If everyone would restrain himself, all would be well; but it takes only one less than everyone to ruin a system of voluntary restraint. In a crowded world of less than perfect human beings, mutual ruin is inevitable if there are no controls. This is the tragedy of the commons.

One of the major tasks of education today should be the creation of such an acute awareness of the dangers of the commons that people will recognize its many varieties. For example, the air and water have become polluted because they are treated as commons. Further growth in the population or per capita conversion of natural resources into pollutants will only make the problem worse. The same holds true for the fish of the oceans. Fishing fleets have nearly disappeared in many parts of the world, technological improvements in the art of fishing are hastening the day of complete ruin. Only the replacement of the system of the commons with a responsible system of control will save the land, air, water, and oceanic fisheries.

The World Food Bank

In recent years there has been a push to create a new commons called a World Food Bank, an international depository of food reserves to which nations would contribute according to their abilities and from which they would draw according to their needs. This humanitarian proposal has received support from many liberal international groups, and from such prominent citizens as Margaret Mead, U.N. Secretary General Kurt Waldheim, and Senators Edward Kennedy and George McGovern.

A world food bank appeals powerfully to our humanitarian impulses. But before we rush ahead with such a plan, let us recognize where the greatest political push comes from, lest we be disillusioned later. Our experience with the "Food for Peace program," or Public Law 480, gives us the answer. This program moved billions of dollars worth of U.S. surplus grain to food-short, population-long countries during the past two decades. But when P.L. 480 first became law, a headline in the business magazine Forbes revealed the real power behind it: "Feeding the World's Hungry Millions: How It Will Mean Billions for U.S. Business."

And indeed it did. In the years 1960 to 1970, U.S. taxpayers spent a total of $7.9 billion on the Food for Peace program. Between 1948 and 1970, they also paid an additional $50 billion for other economic-aid programs, some of which went for food and food-producing machinery and technology. Though all U.S. taxpayers were forced to contribute to the cost of P.L. 480, certain special interest groups gained handsomely under the program. Farmers did not have to contribute the grain; the Government, or rather the taxpayers, bought it from them at full market prices. The increased demand raised prices of farm products generally. The manufacturers of farm machinery, fertilizers, and pesticides benefited by the farmers' extra efforts to grow more food. Grain elevators profited from storing the surplus until it could be shipped. Railroads made money hauling it to ports, and shipping lines profited from carrying it overseas. The implementation of P.L. 480 required the creation of a vast Government bureaucracy, which then acquired its own vested interest in continuing the program regardless of its merits.

Extracting Dollars

Those who proposed and defended the Food for Peace program in public rarely mentioned its importance to any of these special interests. The public emphasis was always on its humanitarian effects. The combination of silent selfish interests and highly vocal humanitarian apologists made a powerful and successful lobby for extracting money from taxpayers. We can expect the same lobby to push now for the creation of a World Food Bank.

However great the potential benefit to selfish interests, it should not be a decisive argument against a truly humanitarian program. We must ask if such a program would actually do more good than harm, not only momentarily but also in the long run. Those who propose the food bank usually refer to a current "emergency" or "crisis" in terms of world food supply. But what is an emergency? Although they may be infrequent and sudden, everyone knows that emergencies will occur from time to time. A well-run family, company, organization, or country prepares for the likelihood of accidents and emergencies. It expects them, it budgets for them, it saves for them.
Learning the Hard Way

What happens if some organizations or countries budget for accidents and others do not? If each country is solely responsible for its own well-being, poorly managed ones will suffer. But they can learn from experience. They may mend their ways, and learn to budget for infrequent but certain emergencies. For example, the weather varies from year-to-year, and periodic crop failures are certain. A wise and competent government saves out of the production of the good years in anticipation of bad years to come. Joseph taught this policy to Pharaoh in Egypt more than 2,000 years ago. Yet the great majority of the governments in the world today do not follow such a policy. They lack either the wisdom or the competence, or both. Should those nations that do manage to put something aside be forced to come to the rescue each time an emergency occurs among the poor nations?

"But it isn't their fault" some kindhearted liberals argue. "How can we blame the poor people who are caught in an emergency? Why must they suffer for the sins of their governments?" The concept of blame is simply not relevant here. The real question is, what are the operational consequences of establishing a world food bank? If it is open to every country every time it needs help, slovenly rulers will not be motivated to take Joseph's advice. Someone will always come to their aid. Some countries will deposit food in the world food bank, and others will withdraw it. There will be almost no overlap. As a result of such solutions to food shortage emergencies, the poor countries will not learn to mend their ways, and will suffer progressively greater emergencies as their populations grow.

Population Control the Crude Way

On the average, poor countries undergo a 2.5 percent increase in population each year; rich countries, about 0.8 percent. Only rich countries have anything in the way of food reserves set aside, and even they do not have as much as they should. Poor countries have none. If poor countries received no food from the outside, the rate of their population growth would be periodically checked by crop failures and famines. But if they can always draw on a world food bank in time of need, their population can continue to grow unchecked, and so will their "need" for aid. In the short run, a world food bank may diminish that need, but in the long run it actually increases the need without limit.

Without some system of worldwide food sharing, the proportion of people in the rich and poor nations might eventually stabilize. The overpopulated poor countries would decrease in numbers, while the rich countries that had room for more people would increase. But with a well-meaning system of sharing, such as a world food bank, the growth differential between the rich and the poor countries will not only persist, it will increase. Because of the higher rate of population growth in the poor countries of the world, 87 percent of today's children are born poor, and only 12 percent rich. Year-by-year the ratio becomes worse, as the fast-reproducing poor outnumber the slow-reproducing rich.

A world food bank is thus a commons in disguise. People will have more motivation to draw from it than to add to any common store. The less provident and less able will multiply at the expense of the able and more provident, bringing eventual ruin upon all who share in the commons. Besides, any system of "sharing" that amounts to foreign aid from the rich nations to the poor nations will carry the taint of charity, which will contribute little to the world peace so devoutly desired by those who support the idea of a world food bank.

As past U.S. foreign-aid programs have amply and depressingly demonstrated, international charity frequently inspires mistrust and antagonism rather than gratitude on the part of the recipient nation.

Chinese Fish and Miracle Rice

The modern approach to foreign aid stresses the export of technology and advice, rather than money and food. As an ancient Chinese proverb goes: "Give a man a fish and he will eat for a day; teach him how to fish and he will eat for the rest of his days." Acting on this advice, the Rockefeller and Ford Foundations have financed a number of programs for improving agriculture in the hungry nations. Known as the "Green Revolution," these programs have led to the development of "miracle rice" and "miracle wheat," new strains that offer bigger harvests and greater resistance to crop damage. Norman Borlaug, the Nobel Prize winning agronomist who, supported by the Rockefeller Foundation, developed "miracle wheat," is one of the most prominent advocates of a world food bank.

Whether or not the Green Revolution can increase food production as much as its champions claim is a debatable but possibly irrelevant point. Those who support this well-intended humanitarian effort should first consider some of the fundamentals of human ecology. Ironically, one man who did was the late Alan Gregg, a vice president of the Rockefeller Foundation. Two decades ago he expressed strong doubts about the wisdom of such attempts to
increase food production. He likened the growth and spread of humanity over the surface of the earth to the spread of cancer in the human body, remarking that "cancerous growths demand food; but, as far as I know, they have never been cured by getting it."

**Overloading the Environment**

Every human born constitutes a draft on all aspects of the environment: food, air, water, forests, beaches, wildlife, scenery, and solitude. Food can, perhaps, be significantly increased to meet a growing demand. But what about clean beaches, unspoiled forests, and solitude? If we satisfy a growing population's need for food, we necessarily decrease its per capita supply of the other resources needed by men.

India, for example, now has a population of 600 million, which increases by 15 million each year. This population already puts a huge load on a relatively impoverished environment. The country's forests are now only a small fraction of what they were three centuries ago, and floods and erosion continually destroy the insufficient farmland that remains. Every one of the 15 million new lives added to India's population puts an additional burden on the environment, and increases the economic and social costs of crowding. However humanitarian our intent, every Indian life saved through medical or nutritional assistance from abroad diminishes the quality of life for those who remain, and for subsequent generations. If rich countries make it possible, through foreign aid, for 600 million Indians to swell to 1.2 billion in a mere 28 years, as their current growth rate threatens, will future generations of Indians thank us for hastening the destruction of their environment? Will our good intentions be sufficient excuse for the consequences of our actions?

My final example of a commons in action is one for which the public has the least desire for rational discussion—immigration. Anyone who publicly questions the wisdom of current U.S. immigration policy is promptly charged with bigotry, prejudice, ethnocentrism, chauvinism, isolationism, or selfishness. Rather than encounter such accusations, one would rather talk about other matters, leaving immigration policy to wallow in the crosscurrents of special interests that take no account of the good of the whole, or the interests of posterity.

Perhaps we still feel guilty about things we said in the past. Two generations ago the popular press frequently referred to Dagos, Wops, Polacks, Chinks, and Krauts, in articles about how America was being "overrun" by foreigners of supposedly inferior genetic stock. But because the implied inferiority of foreigners was used then as justification for keeping them out, people now assume that restrictive policies could only be based on such misguided notions. There are other grounds.

**A Nation of Immigrants**

Just consider the numbers involved. Our government acknowledges a net inflow of 400,000 immigrants a year. While we have no hard data on the extent of illegal entries, educated guesses put the figure at about 600,000 a year. Since the natural increase (excess of births over deaths) of the resident population now runs about 1.7 million per year, the yearly gain from immigration amounts to at least 19 percent of the total annual increase, and may be as much as 37 percent if we include the estimate for illegal immigrants. Considering the growing use of birth-control devices, the potential effect of educational campaigns by such organizations as Planned Parenthood Federation of America and Zero Population Growth, and the influence of inflation and the housing shortage, the fertility rate of American women may decline so much that immigration could account for all the yearly increase in population. Should we not at least ask if that is what we want?

For the sake of those who worry about whether the "quality" of the average immigrant compares favorably with the quality of the average resident, let us assume that immigrants and nativeborn citizens are of exactly equal quality, however one defines that term. We will focus here only on quantity; and since our conclusions will depend on nothing else, all charges of bigotry and chauvinism become irrelevant.

**Immigration versus Food Supply**

World food banks move food to the people, hastening the exhaustion of the environment of the poor countries. Unrestricted immigration, on the other hand, moves people to the food, thus speeding up the destruction of the environment of the rich countries. We can easily understand why poor people should want to make this latter transfer, but why should rich hosts encourage it?

As in the case of foreign-aid programs, immigration receives support from selfish interests and humanitarian impulses. The primary selfish interest in unimpeded immigration is the desire of employers for cheap labor, particularly in industries and trades that
offer degrading work. In the past, one wave of foreigners after another was brought into the United States to work at wretched jobs for wretched wages. In recent years the Cubans, Puerto Ricans, and Mexicans have had this dubious honor. The interests of the employers of cheap labor mesh well with the guilty silence of the country's liberal intelligentsia. White Anglo-Saxon Protestants are particularly reluctant to call for a closing of the doors to immigration for fear of being called bigots.

But not all countries have such reluctant leadership. Most educated Hawaiians, for example, are keenly aware of the limits of their environment, particularly in terms of population growth. There is only so much room on the Islands, and the islanders know it. To Hawaiians, immigrants from the other forty-nine states present as great a threat as those from other nations. At a recent meeting of Hawaiian government officials in Honolulu, I had the ironic delight of hearing a speaker, who like most of his audience was of Japanese ancestry, ask how the country might practically and constitutionally close its doors to further immigration. One member of the audience countered: "How can we shut the doors now? We have many friends and relatives in Japan that we'd like to bring here some day so that they can enjoy Hawaii too." The Japanese-American speaker smiled sympathetically and answered: "Yes, but we have children now, and someday we'll have grandchildren too. We can bring more people here from Japan only by giving away some of the land that we hope to pass on to our grandchildren some day. What right do we have to do that?"

At this point, I can hear U.S. liberals asking: "How can you justify slamming the door once you're inside? You say that immigrants should be kept out. But aren't we all immigrants, or the descendants of immigrants? If we insist on staying, must we not admit all others?" Our craving for intellectual order leads us to seek and prefer symmetrical rules and morals: a single rule for me and everybody else; the same rule yesterday, today, and tomorrow. Justice, we feel, should not change with time and place.

We Americans of non-Native American ancestry can look upon ourselves as the descendants of thieves who are guilty morally. If not legally, of stealing this land from its Indian owners. Should we then give back the land to the now living American descendants of those Native Americans? However morally or logically sound this proposal may be. I, for one, am unwilling to live by it and I know no one else who is. Besides, the logical consequence would be absurd. Suppose that, intoxicated with a sense of pure justice, we should decide to turn our land over to the Native Americans. Since all our wealth has also been derived from the land, wouldn't we be morally obliged to give that back to the Native Americans too?

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Pure Justice versus Reality

Clearly, the concept of pure justice produces an infinite regression to absurdity. Centuries ago, wise men invented statutes of limitations to justify the rejection of such pure justice, in the interest of preventing continual disorder. The law zealously defends property rights, but only relatively recent property rights. Drawing a line after an arbitrary time has elapsed may be unjust, but the alternatives are worse.

We are all the descendants of thieves, and the world's resources are inequitably distributed. But we must begin the journey to tomorrow from the point where we are today. We cannot remake the past. We cannot safely divide the wealth equally among all peoples so long as people reproduce at different rates. To do so would guarantee that our grandchildren, and everyone else's grandchildren, would have only a ruined world to inhabit.

To be generous with one's own possessions is quite different from being generous with those of poverty. We should call this point to the attention of those who, from a commendable love of justice and equality, would institute a system of the commons, either in the form of a world food bank, or of unrestricted immigration. We must convince them if we wish to save at least some parts of the world from environmental ruin.

Without a true world government to control reproduction and the use of available resources, the sharing ethic of the spaceship is impossible. For the foreseeable future, our survival depends that we govern our actions by the ethics of a lifeboat, harsh though they may be. Posterity will be satisfied with nothing less.