herent behavior of its members, a
society must use some fraction of its
resources in creating and maintaining
a coherent system of incentives. In hu-
mankind societies, these are largely cultural
values—and valuables. Their cost in
resources will depend on how tightly
organized the society is and on its size:
the larger the scale, the more impressive
and structured the incentives need to
be to overcome the tendency toward
selfishness and shortsightedness. Ob-
viously the system now functioning in
the industrialized West is too inefficient
for extension to a global scale. But can
we be sure that eliminating even some
of its sillier "inefficiencies" will not
weaken its incentive structure so much
that, for instance, feeding New York
on Midwestern food will be impossible?
There must be a break-even point in
expanding the scale of a society,
when the increase in availability of re-
sources no longer pays for the in-
creased requirements of maintaining
economic coherence. This scale was
larger in the now-vanishing era of
abundant resources, but now it may be
less than continental, and far less than
global. If this is so, then a world food
bank is rather like a perpetual motion
machine of the second kind. This con-
jecture gives me no joy. I sincerely
hope my discussing it will not seem
obscene.

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The idea of letting people die, Re-
velle says, is "obscene." Well, if so, it
is just as obscene to let people die in
the future as it is to let them do so
now. If I could be 99 percent certain
that one generation of enforced West-
ern vegetarianism would be followed
by a world of plenty, I might try to en-
force it on my children and yours. I
might do so if I were even 90 percent
sure. But I am not even 1 percent sure
of a good outcome, let alone a world
of plenty, resulting.

By foregoing meat and producing all
the food we can, Westerners can pre-
vent starvation this year; of that I am
90 percent convinced. But if we do so,
I am also more than 90 percent con-
vinced that non-Western populations
will keep growing until we can't feed
them, even at great cost to the quality
of our soils.

By veritably impoverishing our own
we cannot even save the world from
death. Sooner or later the bullet must
be bitten; I choose sooner. The suffering
of a famine in 1980 or 1990 is only
more remote than the suffering of one
in 1975. Qualitatively, it is the same
horror. Quantitatively, more people will
suffer the longer it is put off.

We Westerners brought it on our-
selves, by saving lives through medical
skill and humanitarian generosity. No-
body seemed to foresee the demographic
consequences of drastically reducing
death rates; or those who did either
hoped for some vague miracle or
couldn't (wouldn't?) be heard. The mil-
lions of lives saved by our medical help
became the hundreds of millions of
lives that are due to be lost in famines.

Many of those who will die are Hin-
dus. The Hindu ethic, as I recall, en-
joints its adherents not to interfere in
lives, even to save them. The person
who saves life is held responsible for
the person whose life he saves.

Western "ameliorists" have ignored
this principle in bringing lifesaving
medical technology to the East. Now,
much of world opinion holds them re-
ponsible for the peoples whose over-
population is traced to Western medical
aid. Shall we impoverish the West in
order to make the problem even worse,
and in the process weaken both our
land and theirs?

I think not; this is the essence of the
"lifeboat ethic" which Revelle criticizes.
Let too many people into a lifeboat and
all will sink. The same may well be true
of our spaceship called Earth. Murder
is obscene. Admitting that someone is
dying, is not—even if you could keep
him alive for another day by hastening
the deaths of others.

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In our opinion, the "lifeboat ethic," as
described by Hardin (1), is hardly to be considered obscene. The time is
now to stop responding emotionally
with all evidence indicates is an im-
pending disaster. We are still harboring
the Judeo-Christian ethic, which can-
not offer long-term solutions. Revelle's
statement that the sharp decline in
birth rates of several developing coun-
tries is proof that man will voluntarily
limit his own fertility conflicts with the
evidence. Even were it so that mankind
would eventually voluntarily control his
population growth, the time required
for this to serve as a solution to the
problem is a luxury we cannot afford.

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ever-expanding populations. He states that the rich nations of the world would be “morally justified” in compelling governments to initiate selected social reforms when accepting our aid, but he appears to think it would be unjustified to compel human population regulation. An improvement in the quality of life cannot be expected until population levels consistent with carrying capacities of the environment are attained.

The “Rachet effect,” as explained by Hardin (1, p. 563), is as applicable to man as it is to all other biological species. The world food bank merely constitutes another turn of the ratchet. Revelle’s solutions in the absence of population control are inoperable. We must apply the principles of population dynamics developed through years of consideration as well as develop new techniques and new life ethics.

As the problem-solvers of the immediate future who, we hope, possess the training and mental bent to recognize the need for a sociobiological revolution, we are not receiving from either academia or our cultural milieu the tools necessary to cope with the problems. Witness the fact that not one scientific organization has felt it necessary to publicly take a stand on any of the population-associated crises facing mankind. If scientists as a body refuse to accept responsibility in this area, how can we hope to help society as a whole cope with an uncertain future?

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References

Nobody can look without horror on the prospect, let alone the actual spectacle, of fellow human beings starving to death. It is a monstrous thing, but we live in an age of monstrosities, —some still latent but imminent, unless actively forestalled—and it is literally necessary to consider not only relative degrees of monstrosity, but the fact that some monstrosities are qualitatively more ghastly than others. Overpopulation and starvation are interdependent monstrosities, but of a qualitatively different nature. I believe that the former is far more dire than the latter.

If a quarter of the people in the world starved to death next year, the human condition, in the larger sense, would not be basically or permanently changed. After a few generations, this calamity would leave no basic imprint on our collective consciousness, any more than did the deaths of one-fourth of the people of Europe in the great plague of the 14th century.

However, if the population of the world goes on increasing at the present rate for very much longer, the human condition will be basically and catastrophically altered, in an irreversible way. We have systematically, in the name of humanness, eliminated nearly all of Nature’s checks and balances on the human population, and in so doing we have moved very far in the direction of creating a Hell on Earth of our own design. We will have no humane way of getting out of it once we are in it. There is only so much human and technological waste this planet can tolerate, no matter how we try to clean it up and detoxify it. There is only so much remaining in the way of minerals and metals and fossil fuel. There is only so much arable land. Much of the land we use today to produce food is productive only because it is fertilized, often heavily. But do we believe the reserves of phosphate rock are infinite?

Not too long ago there was a great and horrible flood in Bangladesh, which killed thousands of people. Nearly everyone would consider the question, What killed these people? a trivial one. The flood, obviously. That answer, however, illustrates the widespread, ostrich-like attitude about the population bomb. It was overpopulation that killed them, because if the country weren’t so overpopulated that millions of people are forced to live in an unsuitable and intermittently lethal area, practically no one would voluntarily do so.

The question, What shall we do about starvation in various parts of the world today? also has an obvious answer: Send food. But if we let it go at that and become so busy with this immediate, manifest problem that we fail to get busy with the latent but impending horror of overpopulation, we shall be making our gravest-and-last mistake. Really effective measures to halt population growth will not be pleasant or popular, and because the consequences of inaction are not an immediate threat, human nature is such that it is natural—but in the
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has markedly improved during the last two decades. Many demographers believe that this is largely responsible for the decline in fertility.

Except for some small “island” nations, the most serious population problem of the present and the foreseeable future in the poorer countries—and it is very serious indeed—is not “overpopulation,” but rapid population growth, as it manifests itself in high ratios of children to adults, large families, and a rapid increase in the size of an untrained labor force. Do any of the letter writers seriously think that, if India had a smaller population but the same percentage rate of population growth, the poorer classes would be much better off than they are today? If so, they should visit Chad in central Africa, as I have recently done. Here is a country about one-third the size of India in area, with great potential resources, including two great rivers and millions of acres of arable land, with 0.7 percent of India’s population. Yet average incomes are less than half those in India. Thomas Malthus showed long ago (Essay on Population, first edition, 1798) that regions with sparse populations and low population densities are just as likely to suffer from “population problems” as large, densely populated ones.

The function of a world food bank would not be, as several of the letters imply, to serve as a vehicle for a perpetual transfer of food from the United States and other rich countries to the poor ones. Rather, it would be a device to even out weather-caused fluctuations in food supplies and the resulting much larger fluctuations in food prices. Experience since World War II shows that several years of bad weather in succession result in a 6 to 7 percent shortfall in world cereal production, while several years of good weather result in a surplus. Through the mechanism of a world food bank, surplus cereals could be purchased and stored during good years and sold at approximately what was paid for them during bad years. The world’s farmers and consumers would both benefit. But a world food bank should not be thought of as a substitute for all-out efforts to modernize agriculture in the poor countries.

With presently existing agricultural technology, the possibilities for increased harvests are very large. In India, for example, a tripling or quadrupling of agricultural production over the next several decades is technically and economically feasible, although there are discouraging social and political obstacles. Such an increase in production should not be limited by a scarcity of material resources. Known world reserves of high-grade phosphate rock are sufficient to last for 450 to 600 years, at the expected world rate of use, in the early part of the 21st century. Usable reserves of lower-grade ore are about eight times as great (1). The amount of nitrogen in the atmosphere is around 10 million times larger than any conceivable application of nitrogen fertilizers in the future. With the world population, the future availability of energy is more problematic, even though it possesses more than 100 tons of coal reserves per capita, enough to last for 500 years at present very low rates of use.

As the recent U.N. World Population Conference showed, the number of organizations concerned with population problems is legion, including many U.N. agencies, the bilateral assistance organizations of several rich countries, the Ford, Rockefeller, and other foundations, and numerous voluntary associations, both large and small. Between them, organizations have accomplished a good deal within a very short time, though the future tasks are formidable. As for the claim that no scientific organization has taken a stand on “population-associated crises,” it may be sufficient to recall the series of publications of the National Academy of Sciences, beginning in 1963 with a comprehensive statement entitled The Growth of World Population (2).

After 35 years of careful study of population problems, Thomas Malthus concluded the last edition of his famous Essay on Population (1835) with these words: “It is hoped that the general result of the inquiry is such as not to make us give up the improvement of human society in despair. . . . Although we cannot expect that the future happiness of mankind will keep pace with the brilliant career of physical discovery, yet if we are not wanting to ourselves, we may confidently indulge the hope that to no unimportant extent, they will be influenced by its progress and will partake in its success.”

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References
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