The Impact of Technology

There is a crucial convergence of interest among those groups that work for peace, development, and the environment. In a fundamental sense each of these sets of groups has been seeking to face the impact of technology on the contemporary world. If peace groups have grasped acutely that modern weapons make traditional war-fighting obsolete, they are also sensitive to the relationship among security, justice, and freedom in development. Development groups in their turn constantly face problems of peace and justice in a world that technology has transformed in new possibilities of control and productivity, communication and trade, and standards of living and opulence. Environmental groups, finally, encounter the difficulty of caring for the earth as its resources are exploited, expanded, and competed for to provide for the needs of both developed and developing countries.

Contemporary work for justice, peace, and ecology takes place within the context of considerable scientific and industrial achievement. On the positive side, this achievement has led to health and comfort, communication and control over the environment to an extent undreamt of in preindustrial times, and makes people globally aware of the new possibilities, including those nations who do not have access to them. On the negative side, this growth has led to consuming in a few years, through an overcasual and polluting use of technology, resources that took millennia to put in place; it has wounded the planet in various places; and it has put the greater part of the world’s resources in the hands of a minority of the world’s population. There is little hope that the human majority will reach within their lifetime or that of their children the living standards of the minority.

The reconciliation of sustainable and shared global economic growth with the protection of the environment and the maintenance of peace is complicated enormously by the disparity between the economic levels of developed and developing countries and by the obstacles to sustainable and shared development that exist in phasing and planning development throughout the world. Even if in rich countries those who control the resources are convinced that they have to use resources in a nonpolluting way, it is still difficult to convince them that resources must be used more economically, and even more difficult to convince them that resources need to be used in a way that will make them available to those who do not presently possess them. In most poor countries, it has, in turn, proved immensely difficult to create the kinds of skills and organisation that underpin technology. At the same time, there is no reversing the hopes awakened by technology. Moreover, poor countries cannot be con-
vinced to put their meagre resources into car-
ing for their part of the global environment unless rich countries compensate them for such difficult investment.

**Economic Development and Ecological Sustainability**

If we accept that we need to combine economic growth with the care of the envi-
ronment, we have to accept that linkages between problems take on different shapes in different parts of the world: some three-quar-
ters of the world’s peoples assign different priority and phasing to the tasks of accompl-
ishing economic growth and ecological sus-
tainability than do the well-to-do one quarter.

**Ecology vs. Survival**

The rich countries tend to organise their views of environmental problems around sev-
eral overlapping themes: climate change, ozone damage, biodiversity, land degra-
dation, deforestation, population growth, ocean contamination, and chemical and other pollu-
tion. Each one of these themes affects the developing world -- and some of them affect developing countries much more than they do the developed -- but the prioritising, costing, and timing of the solutions to these problems can vary greatly in the different sets of coun-
tries. Climate change, for example, may affect low-lying countries such as Bangladesh.

Most developing countries, however, worry more about feeding their people than about global warming. They may know that they have more people than their resources can sustain, but they cannot immediately put resources into birth control projects when they cannot afford to put them into combat-
ing malaria. They cannot easily persuade families who need hands to work with and who have no social security for old age that it is extravagant to have children (though this is no argument against pursuing sensible birth control policies).

This difficulty of persuasion remains true even when advances in health facilities enable more children to grow up and leads populations to overuse available resources. These populations, in general, are not aware of bio-
diversity and will not easily value protecting animal species more than clearing forest trees to feed their own children. They may lament in places that it is now difficult to obtain fire-
wood, but they must still seek it as best they can. They are insensitive to the pollution of the oceans as they struggle to cope with low wages, unemployment, hunger, ill health, wretched housing, polluted water, open sew-
ers, and rickety and uncertain transport.

Finally, the worst ecological problem on the planet is the fact that 20% to 40% of chil-
dren in poor countries do not live beyond the age of two years; and most adults die at what in the wealthy countries would be considered middle age or earlier.

Understandably, the poor nations mostly prefer to put economic growth and social improvements ahead of planetary ecology. For such reasons, in their bargaining on eco-
logical issues, governments of developing countries want economic benefits -- financial aid, debt remission, and more advantageous trade conditions, as well as access (without restrictions on intellectual property) to clean technology -- in exchange for preserving bio-
diversity and for restricting the development of their forests. It may be providential that the poor own many of the resources that the rich now want to exploit.

Forests provide an important example of this complexity. Amidst the welter of eco-
logical matters raised at the Rio meeting on the environment in 1992 no issue gripped the first world’s imagination like the fate of the forests. There are good reasons for this reac-
tion. The tropical forests contain half the world’s species; they act as a sink for atmos-
pheric carbon dioxide; they furnish goods ranging from timber to fruits; and in prodig-
ally cutting them down or burning them, people release carbon dioxide and add to global warming. Yet even if Western aid went to countries to persuade them to go slowly on deforestation, there is no guarantee that the poor who need to clear land or the middle level entrepreneurs involved in logging would accept that it was in their inter-
ests to stop or that they would be helped or compensated by their governments who had received this Western aid.

**Population vs. Consumption**

The dimensions of the problem are com-
plex and multifaceted. Overpopulation in poor countries is, for example, a serious prob-
lem that harms the local and global environ-
ment. Population growth in the context of existing technology in developing countries is considered responsible for 79% of defor-
estation, 72% of arable land expansion, and 69% of livestock growth. No small part of world environmental degradation takes place as poor countries concentrate on cash crops to obtain foreign exchange to buy goods from rich countries. Moreover, world population is expect ed to rise from our pre-

tent 5.5 billion to about 12 billion to 12.5 bil-
lion by the year 2050.

From the overconsumption side, howev-
er, it is important to note that four-fifths of car-on dioxide emissions come from burning fos-
sil fuels (cars and power stations) and a quar-
ter of the world’s population are responsible
for three quarters of the emissions. One child in a developed country will consume three to four times more resources than nine children in the developing world. A Bangladeshi citizen consumes energy equivalent to three barrels of oil a year, a U.S. citizen, 55 barrels.

**Failure of Development**

While one must make a case for the issues facing the developing world, one must note also that there has been a dreadful failure of development in many, if not most, poor countries since around 1960. Although Western economic policies have been hostile in many ways, the greatest problems have been internal. These problems include generating and imparting skills, creating a stable political culture in which rising and impatient aspirations do not place intolerable burdens on governments, establishing an efficient and upright bureaucracy, avoiding expensive and irrelevant prestige projects, and building a sense of the common wealth of the state or political association that can surmount ethnic and local community allegiances.

**Runaway Development**

Current environmental threats come not only from pervasive poverty in underdeveloped countries but from ill-regulated industry in the developed countries. One of the difficulties of regulating industry in developed countries derives from the additional cost of doing so. Yet industrial countries cannot continue to produce excessive radiation, chemical contamination, acid rain, freshwater pollution, and ever growing amounts of waste.

The industrial countries must keep in mind that they can go on using existing materials in their present volume and style of use only because some three quarters of the world’s population do not have equivalent access to those materials and cannot use them in the same way. Otherwise, within the limits of contemporary technology, there would neither be enough resources nor materials to go around among all countries nor enough clean capacity to use materials.

Ecological considerations are pointing towards a rethinking of how we use the resources of the planet in ways that are economical, interdependent and whole some (the last term taken in the broadest sense to include health, a user-friendly and aesthetic environment, and respect for other species as well as humans).

**The Necessary Cooperation of Rich and Poor**

Ecological thinking joins forces with development concerns in contending that present patterns of resource usage and consumption not only cannot continue indefinitely in their present forms within industrial nations but cannot even begin to provide resources to meet the needs of poor countries. The stated Chinese goal of providing a refrigerator for every family illustrates simultaneously the problem of adequate metal supplies and the acceleration of ozone depletion from multiplying existing refrigeration gases. Were there a Chinese goal of providing an automobile for every family, the resource issue would be all the starker. In consequence, the challenge for those who control technology is to carry out the research that will enable our contemporaries to use existing resources frugally, to work on value added approaches, and to create new resources in skills, equipment and materials (new materials, particularly renewable materials) that can be expanded and made available for global consumption — and that yet respect and enhance the care of humans and the good use of the earth.

Global development and peace are intertwined. There is little foresight in thinking that a small group of the world’s countries can go on making use of the vastly greater part of the world’s resources or that international stability will resist the impatient demands of new and still growing populations for faster rising living standards in a world whose different parts are involved in a communications revolution and are no longer opaque to one another. In a profound sense there is a challenge to well-to-do countries to move out from their boundaries, to break through their cultural limitations, to set aside too readily accepted concepts of comfort, and to recognise others as possessing a common humanity as well as common needs and aspirations.

In sum, if the environment issue is not for many countries the most immediate problem, it has brought together the issues of development and ecology. Groups in the rich countries who would not have readily taken on the issue of development have had to confront it once it has become clear that underdevelopment is harming their own environment. Well-to-do countries that worry about the effects of global warming, the destruction of the ozone layer, and tropical deforestation cannot cope with the consequences without calling on the majority of the globe’s inhabitants, at least as auxiliaries, in the struggle. In other words, while the poverty of the developing world touches the rich psychologically, the ecology of the poor touches them structurally.

**The Dangers Ahead**

Green thinkers who are hostile to or uneasy about much Western technology and
the living standards of developed nations point to previous civilisations that have destroyed their resource base -- North Africa was once the granary of the Roman empire, Iraq fed great empires, and small islands that maintained their peoples comfortably now have ruined habitats. The analogies, however, are misleading. With the scientific and industrial revolutions human activity can have -- much more than in the past -- a more powerful effect on nature, both for good and bad. Humankind owns now a profound inventiveness and a capacity to adapt; we can hope to put right many of those things that have gone wrong or that are going wrong.

Nevertheless, there are great dangers that come from three sources. First, many in developed countries are driven by a passion for forms of growth that comes out of attitudes engendered by the historic human struggle against hunger, disease, and natural disaster: human desires have not yet come to terms with the ease and abundance created by contemporary achievements. While advances in health as an area and computing as a technique can continue, it is not rational or sensible to go on ravaging the environment for relatively peripheral advances in transport, cosmetics, and comfort. What this anachronistic passion for goods and luxury may do especially is to lead us to get the priorities, timing, and style of desirable future progress wrong.

Second, we need to be sensitive to the consequences of the spread of technology and the communications explosion of the contemporary world: the expanding elite groups of developing countries grow impatiently aware of what the developed countries have and what they themselves do not and the resulting lag in closing the gap in living standards. Unfortunately, one of the obstacles to understanding the build-up of interest conflict between North and South -- and a possible coming confrontation -- is a failure to warn. The existing world media are mostly in the control of those in the developed world who are satisfied with the status quo and who in good measure see the present repartition of the world's resources as simply reflecting social and economic ability as well as the claims of historic possession. The central problem in urging reconsideration of such issues is that not only is it difficult for governments and peoples to readjust perspectives but that they seldom face longer term and international issues until they become acute. Even in solidly democratic and well-educated countries the future has few votes.

The poor, however, are not going indefinitely to press their noses against the plate glass windows of the rich without threatening and trying to break through. Since the spread of military technology is now such that even the poor can threaten the rich, the rich must gear technological progress more towards sharing prosperity and its research and move more quickly towards finding new and renewable materials. If the rich do not take such steps, there will not be enough for all those who want more and who will seek to insist on more.

Third, we have in nuclear weapons the capacity to destroy our civilisation militarily. The only way in which we can avoid doing this is to set aside age-old overreliance on military security; accept that in our time conflict between powers needs to admit of non-violent resolution, create world political structures that match, contain, and control the global reach and transforming impact of technology; and develop an understanding of our common human belonging that blossoms into global fellowship. For the developed countries, the alternative to such policies is to set up a siege society walled off against the poor majority that would make a white South African laager look simultaneously trivial and rational.

**The Opportunities: The Future Is Not What It Was**

The challenge in our times is to develop technology so as to use existing resources frugally and to create new resources that can be expanded for global consumption. At the same time we must respect and enhance the welfare of humans and the care of the earth. Technological innovation has taken place so fast in recent times that we are still using thought forms, value attitudes, and patterns of social organisation that are linked to earlier stages of the industrial revolution. In consequence, we have not yet come properly to terms with contemporary technology, which, to complicate matters, has in the computer revolution also entered an even faster phase of innovation and change. For such reasons, the crucial alliance for thinking and acting about peace is also the coalition required in a technological age for thinking and acting about the future. There is a profound affinity of thought and values among those who strive for related goals and a clear case for cooperation among them.

Three sensible means of facing towards the future seem apposite. First, to make and to sustain peace in the near future there needs to be an agreed form of world policing which states pool their sovereign ties and in which the great military powers have a dominant but not exclusive role.

Second, strong mediation efforts by various powers and groups and judicious and
relatively disinterested applications of influence by the larger powers are needed to eradicate in various parts of the world sources of conflict that cause human misery and often underlie terrorist activities. These efforts are needed to prevent or to stop wars and to eliminate arbitrary and intermittent acts of violence and terrorism that disturb national and international orders.

Third, beyond policing and the underpinning, sharing, and acceptance of mediation, there needs to be a gradual growth of accepted world structures that organise the new close neighbourhood of peoples with one another. The richer countries need to think ahead in terms of establishing global political structures, creating new material resources, sharing skills and resources with poorer countries, and engaging in political conciliation. Unfortunately, such long-term thinking is resisted by most people and governments. Consequently, a prophetic task awaits those who are aware that the time is limited for rectifying imbalances of wealth and avoiding the dangers of conflict.

In fundamental ways, those concerned for peace, development, and ecology are working with the tide of the times. If the search for a vision of the interdependence of peoples is pursued, and if a commitment to the care of the earth through a disciplined technology is maintained, then the future may well achieve more stable peace, deeper respect for human rights, and greater shared prosperity than history has hitherto known.