

We know that a switch from leaded to unleaded gasoline would be beneficial for a number of health, agriculture and forest related reasons, but we do not have at our fingertips estimates of the financial savings of such switch to convince provincial treasurers and finance ministers to make the necessary tax changes to equalize the price of leaded and unleaded gasoline to stop misfuelling.

Soon a decision will be made whether or not to build another nuclear energy plant, and we do not yet have the cost of nuclear waste disposal factored into the cost of electricity generated.

We know the climate is warming up and that certain parts of Canada will be affected, but we do not know the costs associated with such changes that would enable us to compare with the costs of trying to reverse the trend.

We know Lake Ontario's water suffers because of leaching of toxic chemicals from the dumpsites along the Niagara River. Yet we have not even started to calculate the cost of this damage for comparison with the costs to municipalities of installing complex and expensive water treatment plants, or of providing water from distant sources.

The easily calculable costs of proposed environmental protection measures, the use of discount rates and short-term cost benefit analysis, have all posed obstacles to the development and implementation of long-term environmental protection policies that would be in the long-term economic interest. This situation has stacked the deck in favour of short-term decisions. The "cost of inaction," if available, would become an important tool to decision-makers. Its absence is a serious drawback if we are to plan for sustainable development.

Resources have not been put behind the effort necessary to realize the impact of the cost of inaction. We need to develop a methodology, for policy advisors, policy developers, and policy makers. It is more than just a matter of political will in the conventional meaning of the phrase.

Let us hope that this symposium will get us going on the road to the identification and application of new economic tools which we badly need. They are of fundamental importance to present and future generations.

Chapter IV

Remarks at the Workshop on Cost of Inaction

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One of the most interesting aspects of an interdisciplinary conference on environmental issues is the differences in perspective between people from different disciplinary backgrounds. The differences between disciplines are partly due to differences in language and academic jargon, but a more fundamental set of differences between disciplines center around the way environmental issues are perceived. Indeed, the theme of this conference is in itself an example of how the discussion can be framed. The title "Cost of Inaction" tends to presume that if no explicit action is taken, some social costs will necessarily result in the form of environmental degradation.

To those trained in the natural sciences, it may seem natural to view environmental issues as purely natural processes, which proceed without conscious behavioural change by any of the participants. In this vein, one can view the increasing ecological stress which an expanding world population and increased economic activity places on the environment as analogous to the unchecked multiplication of bacteria in a petri dish, spiralling out of control prior to the inevitable ecological collapse. Implicitly, this perspective assumes that the world is not characterized by social/economic/ecological systems with feedback loops that would self-correct tendencies to ecological destruction.

Although the biological literature contains many examples of natural species expanding beyond the carrying capacity of their environment and eventually crashing, I would argue that it is not quite accurate to draw analogies between such processes and those which involve the human species. Ecological disasters have, in some cases, extinguished historic human civilizations, and one cannot complacently assume that the environment will solve itself. However, there are also some clearly discernible tendencies in the social and economic systems of modern societies which tend to produce auto-correction in environmental degradation. It seems to me that the real issue for social and political thinkers about the environment is to identify, and attempt to magnify, the tendencies of human social and economic systems to the auto-correction of environmental crisis. A careful analysis of the processes which reduce environmental stress is likely to produce more benefit than cataclysmic proclamations of impending doom. To be specific, I have three examples of stress-reducing processes: economic, demographic, and socio/political.

If consumption of a non-renewable resource is increasing at an exponential rate, extrapolation of consumption trends will inevitably produce the result that the resource is absolutely depleted – usually in fairly short order. However, economists have argued for many years that simple extrapolation of past consumption trends ignores the feedback effects of the price system. As resources become increasingly scarce, they become increasingly expensive. The increasing relative price of resources creates incentives for individual economic agents to locate new supplies, develop substitute materials and economize on consumption. The price system may not do this optimally, and it may not act in time. However, the central point is that the depletion of resources cannot be accurately forecast by simple extrapolation of past trends.

Neither can one predict total population by simple extrapolation of past trends. The human species, taken as a whole, is increasing rapidly in size, but the birth rate in Canada is now approximately 1.7 per woman, substantially less than the rate required for zero population growth in the long term (and less than half the birth rate of Canadian women during the 1950s). Furthermore, declining birthrates are characteristic of developed economies. In the Third World, fertility declines are clearly associated with rising incomes, increasing urbanization of the population and especially with improvements in the relative position of women. Higher levels of female education, greater participation in the paid labour force and higher female earnings can have a dramatic effect in reducing the rate of population growth in poor countries. The population explosion represents a very real stress to the global environment but it is amenable to social processes.

Social processes in developed economies have also produced a noticeable improvement in environmental legislation in the last 20 years. And one can point to specific environmental improvements as a result: one no longer has killer smogs in London, fish swim again in the Thames River, emission controls are now standard on North American automobiles, etc. All these policies represent responses to perceived environmental crisis. Environmental impacts have been turned into crisis by some combination of media pressure and scientific evidence, spawning social and political movements and, eventually, legislation. Part of this process is the mobilization of expert opinion to an agreed course of action – such as this conference is attempting. Hence, in a very real sense one can view this conference itself as part of a feedback loop from environmental stress to the social policies which alleviate that stress.

In listing economic forces, demographic trends and environmental legislation it is not my desire to argue for complacency. There are clearly far too many examples of environmental disasters which have actually occurred. However, I do want to argue that one should attempt to learn from the small victories that have been won on environmental issues and use those lessons to encourage the tendencies in human societies to reduce environmental damage over time. And, in particular, the lessons I take from the above examples are: (1) that economic development is not the automatic enemy of the environment and (2) that changing social values are central to the environmental impact of economically developed societies.

It has been remarked that many natural processes (for example, soil erosion on the Canadian Prairies or the increased carbon dioxide content of the atmosphere) operate on a time scale very much longer than political processes, whose time horizons are largely determined by the electoral cycle, i.e., typically less than four years. However, societies differ fundamentally in the margin that exists to tolerate the expenditure required to reverse slow environmental degradation. Some societies simply cannot afford "short term pain for long term gain."

The affluence of developed societies means that they can afford the luxury of taking the long view. Resources exist to finance scientific research on subjects such as acid rain, or to fund computer simulations of environmental interactions or, indeed, to pay for gatherings like this. But there is much less disposable social surplus available in the Third World. Although there may be widespread awareness of environmental problems (e.g., the overgrazing of the African Savannah which contributes to the increasing desertification of many African countries), the agents of these problems often have no feasible alternative to their current behaviour. To be specific, Masai herdsmen may be well aware of the consequences of overgrazing, but

they have no other alternatives for grazing their cattle, and no reasonable alternative means of livelihood. More generally, in the Third World long-run environmental concerns have to compete with pressing immediate needs in public health, education and social services, as well as with the consumption aspirations of the elite and the hardware ambitions of the military. These competing demands are present, of course, in developed societies but with the crucial difference that resources are available to satisfy more of these competing needs.

In today's world, it is the richest countries which have the greatest ecological awareness and the most stringent environmental regulation. Poor countries are, on average, notable for their lack of attention to environmental issues. The lesson one can take is that economic development is not the enemy of the environment, rather economic development creates the resources which enable long-run environmental issues to be addressed.

But it is also true that the affluent nations of the world consume goods at a tremendous rate, while the poor are great recyclers. The richest 10 per cent of the world population consume approximately half of the world's production of goods and services each year (Berry 1983:222). Clearly, the affluent exert a disproportionate stress on the global environment. It is also observable that societies at approximately the same level of economic development differ significantly in the level of attention that is paid to environmental issues. In short, economic development may not be an automatic enemy of the environment, but it is not an automatic friend either.

What social trends in developed countries influence political institutions to establish legal regimes of regulation and pricing such that individuals and firms will have minimum adverse ecological impact? Underlying social values find their expression in legislation, which establishes incentives for individual behaviour, but the primary importance of social values is probably more direct. It is not just the fear of being fined for littering that stops individuals from littering. Rather, an internalized ethic which says that littering is bad prevents us from doing it, since most of the time we know that as a practical matter the probability of detection is nil.

The evolution of social values towards the environment is, I believe, central to our chances to avoid environmental disasters. But social values are generally diffuse and not always particularly logical. Most of us have several sets of values on hand, which we trot out on appropriate social occasions, without worrying particularly as to their overall logical consistency. Although untidy from a philosophical point of view, the incoherence of values does present the possibility for the environmental movement to emphasize those aspects of our common value systems which have positive ecological implications.

I would hazard the hypothesis that most of us have a concern for the welfare of future generations, not just our immediate progeny but also generations yet unborn. Why this is so is a deeper issue. It may be that we have an emotive identification with our own children, and realize that they will also care about their children, which gives us, by recursion, a concern with generations long in the future. Or it may be some more personal need to feel that all is not over on our own demise—that future generations will share some common experience with our own generation—which creates a concern with the very distant future. But whatever the reason, I believe that many environmental debates (e.g., concerning the disposal of high-level radio-active wastes) cannot really be understood unless we recognize the concern people feel for unborn generations.

Of course, this concern for unborn generations co-exists untidily in most people's minds with the immediate materialistic imperatives of a consumer society. I have argued elsewhere (Osberg 1985) that the welfare of society depends upon more than just the average consumption of its citizenry, since people also care about the uncertainty that attaches to their incomes. There are also good ethical reasons for a concern about economic inequality and about the bequest which this generation leaves for the benefits of future generations.

In part the bequest of this generation can be valued in money terms. The capital goods and public works which we leave behind have a money cost and our assets in these forms can be easily tabulated. Although evaluation of intellectual capital in the form of research and development or human capital in the form of education and training is more difficult, it is still possible. However, a major portion of our bequest to future generations is the quality of the environment which we leave behind. To the extent that we use the environment to produce income, we can assign a money value to our stands of forest, our ore bodies, or our stocks of fish, which represents the present value of such resources as an income source for the future. Evaluation of the more general environmental bequest of this generation in money terms is much more difficult. It is also, I believe, unnecessary if we recognize that part of our bequest lies in the form of the maintenance of a "national heritage."

In many primitive societies the concept of property in land is that of stewardship, in that productive land is conceived of as being held "in trust" by the current generation, who possess only circumscribed rights to the temporary use of the resource (Elias 1962). In these societies, the real owners of land are generations past, present, and future, a concept which we often refer to as our national heritage.

If we adopt, as part of the idea of a national heritage, the premise that certain aspects of the environment should be maintained intact

from generation to generation, then we can measure aspects of the environment (e.g., pollutant concentration in the Great Lakes) but we do not need to put a money value on such environmental aspects, since the national decision has been that they should not be sold. Like the family heirloom that has no explicit price because one would never want to sell it, it is both very difficult, and unnecessary, to set a price on heritage assets.

This approach to the evaluation of social cost would argue that we should establish estimates of the value of marketable assets which we bequeath to future generations and develop a national debate on just what exactly is the national heritage. By focusing the debate on what it is which we wish to preserve from the past, for the benefit of future generations, one would force people to think carefully about what it is which they wish to leave behind them. The debate on definition of a national heritage of environmental assets would provide a positive focus to environmental concerns and the measures necessary to implement them. And by emphasizing the stewardship responsibility of this generation, one would provide an ethical basis for the basic idea of a sustainable development of the world's resource.

References

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