Book Reviews

Inconvenient Alternatives

Exploring New Ethics for Survival. The Voyage of the Spaceship *Beagle*. GARRETT HARDIN. Viking, New York, 1972. xiv, 274 pp. $7.95.

If *The Limits to Growth* and *Blueprint for Survival* brought cries of anguish from economists and others who saw their prize oxen gored, this powerful new foray by a biologist into the same sacred arena is bound to elicit more of the same kinds of squawks. Garrett Hardin has used this book to offer a scholarly and entertaining extension of his brilliant earlier analyses of the 20th-century dilemma: whether to rely on the beguiling hope that the chaos promised by unrestrained growth in all segments of society will ultimately be averted by some benevolent new force arising from growth itself, or to risk a different chaos by moving aggressively now toward new policies of restraint that will increase the time for a reasonable accommodation between soaring demands and obviously finite resources. The special contribution that Hardin brings in this book is a refreshing analysis of the long-term bear market in restraint and some bold suggestions as to how to turn the market bullish. He has produced not a polished plan of action but a series of perceptive analyses, distinguished by a consistent realism, that point clearly to what must be done.

The heart of the problem as Hardin sees it is the classical pattern of exploitation of the "commons" when growth is unlimited. The commons were lands held in public ownership in earlier times for the pasturing of privately owned livestock. As long as the commons were large and grazing pressure small, the system worked. As herds increased, the commons became overgrazed and the system began to fail. Failure was inherent: Profits from any addition to a herd accrued solely to the owner, while losses from overgrazing were shared among all the users. A herdsman who used restraint in expanding his herd found himself doubly penalized, for he not only gained nothing further from his own herd but he suffered the losses from overgrazing imposed on him by his neighbors who expanded their herds. Hardin has made this the classical example of the diffusion of debits over the largest group possible coupled with the focusing of profits as narrowly as possible.

The air, the fresh waters, the oceans are all commons; all are vulnerable to the same patterns of overuse, and all show the effects in varying degrees. So too the earth's supplies of minerals and oil. Appeals to altruism in exploiting the commons are futile; there will always be at least one who will not heed the common good: one person, one company, one state. And so we watch, apparently powerless, while the quality of waters and air decline. We watch the erosion of beauty, the demise of the fisheries; the last of the whales slip into the hands of a few for trivial profits. And we listen to endless but predictable arguments from entrenched interests that black is really white, that the solutions are in technology, that continued economic growth is essential to any solution, that this one last pollution is essential to growth, and that the issues of the crisis of environment will be resolved conveniently without a major change in the ways we do things. The arguments are attractive and it is understandable that they command attention in high places, because they seem to give substance to the hope that solutions are to be found in business as usual. Hardin asserts quite correctly that the solutions lie in effective regulation and that that job is clearly government's own. "Regulation" seems to imply to many a loss of "freedom" that is unacceptable. The alternative, Hardin argues emphatically, is to relinquish the freedom to breed, so that resources can be kept large in proportion to demands. These are simple, patent truths that have not yet diffused into more than the outer shell of even the richest of the world's societies; and worse, the institutionalized pressures to prevent effective action have appeared so overpowering even to the optimistic that the smallest increment of progress is welcomed as a major step.

The context in which Hardin suggests that governments can regulate properly is through a major revolution in traditional mores: a shift from the single-track approaches of Newton to a Darwinian recognition that the world is a single system. Giving credit for this insight to poets among others, he quotes that lonely cynic of a century past, William Blake:

> . . . God us keep
> From single vision and Newton's sleep.

A civilization that can put men on the moon cannot necessarily solve the problems of poverty, urban decay, and crime, for it was a Newtonian approach that put men on the moon, whereas our earthly problems require Darwinian minds. Poverty, says Hardin, is the "symptom of a process" rather than simply a "state." Slum clearance is no cure for poverty in cities. The people of the cleared slum do not dwell in the new buildings. They have been dispersed, their community disrupted, and their problems aggravated. The new buildings please the eye; "something" has been "done" in a Newtonian tradition to satisfy politicians and do-gooders, but the poverty remains, transferred elsewhere with a new increment of crime and chaos. Real solutions are not simple, requiring as they do fundamental changes in the system that generates the poverty. In the absence of a fundamental solution the wise course is often to do nothing. This is the restraint that a Darwinian perspective brings. Familiar? It is a reinforcement of Jay Forrester's recent point about the "counter-intuitive behavior of social systems," and well worthy of some careful thought by those who contemplate new schemes of salvation. In Hardin's view, the restraint required for the transition to a spaceship economy entails taking strong steps to regulate not only the use of the modern commons but also, if voluntary methods fail, the size of population.

Hardin explores imaginatively various devices for reassigning economic responsibilities. How can we hold individuals, corporations, and government

accountable for actions that reach far beyond the immediate objectives? How can we incorporate actual costs into price? How can we give the exploiter of any resource some direct interest in restraint? There is no real alternative to effective governmental control. But *Quis custodiet ipsos custodes?* is the ancient and persistent question, and Hardin explores with characteristic flair both the reasons why regulatory agencies are so easily corrupted and steps that might be taken to change the tendency. One of the most salutary changes in government in recent years has been the National Environmental Policy Act with its requirement of "environmental impact" statements. The statements not only force accurate reporting, often under pressures from the courts, but also offer a legal lever to bring restraint of action until the full effects can be appraised. The law is so effective that one wonders whether the growth interests would have allowed it to pass if they had realized its impact, or will allow it to stand for long. In parallel with this device has been the rapid evolution of privately financed public-interest groups, such as the Nader organizations, the Environmental Defense Fund, and the Natural Resources Defense Council, that have the effect of compelling accurate reporting and move public issues out of the hands of the exploiters and into wider public scrutiny.

Concerning control of population growth Hardin reiterates much of what he and others have said before: without it there will be no future of interest. He makes the cogent but poorly recognized point that policy on population does not constitute control, that there are many steps that can be taken to implement a policy before any action is considered that might be thought coercive. But Hardin is emphatic that time is short and, if lesser steps fail, strong action will be necessary to prevent births from exceeding deaths. Hardin likes Kenneth Boulding's half-humorous suggestion that each person be endowed at birth with the right to have one child and that that right be marketable. Of all the suggestions that have been set forth this one seems to incorporate the largest degree of egalitarianism and the least governmental control. Price would be set by the market. Of course, for such a plan to work it would have to be publicly acceptable and enforced in some reasonable way.

Part of this book is devoted to what could have been a second book, a fantasy Hardin calls "The Voyage of the Spaceship *Beagle*," in which he explores in hyperbole the implications of some of the more dreamy ethics of our time. It is in this section that he quotes an elusive and unpopular paragraph from Malthus that brought severe criticism and was omitted from later editions of Malthus's book. It bears scrutiny now:

> A man who is born into a world already possessed, if he cannot get subsistence from his parents on whom he has a just demand, and if the society do not want his labour, has no claim of right to the smallest portion of food, and, in fact, has no business to be where he is. At nature's mighty feast there is no vacant cover for him. She tells him to be gone, and will quickly execute her own orders, if he does not work upon the compassion of some of her guests. If these guests get up and make room for him, other intruders immediately appear demanding the same favour. The report of a provision for all that come, fills the hall with numerous claimants. The order and harmony of the feast is disturbed, the plenty that before reigned is changed into scarcity; and the happiness of the guests is destroyed by the spectacle of misery and dependence in every part of the hall, and by the clamorous importunity of those, who are justly enraged at not finding the provision which they had been taught to expect. The guests learn too late their error, in counter-acting those strict orders to all intruders, issued by the great mistress of the feast, who, wishing that all guests should have plenty, and knowing she could not provide for unlimited numbers, humanely refused to admit fresh comers when her table was already full.

Continuing in the same vein, Hardin quotes William Foster Lloyd:

> To a plank in the sea, which cannot support all, all have not an equal right; the lucky individuals, who can first obtain possession being justified in appropriating it to themselves, to the exclusion of the remainder.

Hardin's venture is a welcome antidote to the wishful thinking concerning population growth that has been encouraged by Commoner's *The Closing Circle* and to the attacks on the thesis of *The Limits to Growth.* It is the product of much thought by one of the intellectual leaders of our time concerning what should be the central issue of these closing decades of the century. While there are many aspects of the Darwinian revolution that remain to be examined, Hardin here examines enough of them to set off a new avalanche of vigorous discussion. I'm for it.

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Studying Human Populations

The Assessment of Population Affinities in Man. J. S. WEINER and J. HUIZINGA, Eds. Oxford University Press, New York, 1972. xii, 224 pp., illus. $20.50.

The outcome of another symposium organized by the Wenner-Gren Foundation for Anthropological Research, this time jointly with the International Biological Program, this volume is aimed at providing guidance in the analysis of human population data.

For more than a dozen decades, physical anthropologists have pursued an interest in classifying and comparing human populations for a variety of reasons. Similarities or differences were evaluated on the basis of morphological and metrical data. Some dogma resulted from the misconception of a few that accurate measurements invoked exact and finite conclusions. Fairly recently, the recognition of the effects of environmental factors on growth and the rocketing progress of human genetics, especially in serology, linked with the application of electronic computer methodology have combined in restoring an objective order in the somewhat subjective racial marketplace.

As Gower notes in his chapter "Measures of taxonomic distance and their analysis," anthropometricians have pioneered the use of statistical and mathematical methods in taxonomic biology for about 70 years. In the latter half of this period professional statisticians, such as Pearson, Mahalanobis, Fisher, and Rao, increasingly applied the methods, primarily developed with human osteometry, to investigations of the variation of quantitative characters in many groups of animals and plants. With the evolution of electronic computers Sneath, Sokal, Williams, and others rapidly developed new techniques. Fundamentally, taxonomic distance between two groups or two individuals must be defined and analyzed. Gower elegantly traces the history of the development of the techniques measuring similarity and dissimilarity between pairs of individuals and pairs of populations, and he points out that as attempts are made to solve old and new problems further statistical problems are generated. Real sets of data are needed to properly evaluate new methods. Without good data statistical methods and computer programs are not of much use.

In the preface, the editors emphasize the importance of the judicious collec-