

Garrett James Hardin: Ecologist, Educator, Ethicist and Environmentalist

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Garrett James Hardin: Ecologist, Educator, Ethicist and Environmentalist*

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"The population problem has no technical solution: It requires a fundamental extension in morality"—Garrett Hardin

This is the conclusion that Professor Hardin reached in his now classic 1968 "Tragedy of the Commons" presidential address at the meeting of the Pacific Division of the American Association for the Advancement of Science. What led Dr. Hardin to *reject* the traditional scientific belief that the population problem, like all problems, has a strictly technical solution?

What is it about political systems for distributing the benefits and costs of using resources that can and frequently has led to ecological and thus human tragedy? What extension in morality does Garrett Hardin consider to be necessary if we are to minimize such tragic outcomes in the future?

It is appropriate that we honor Garrett James Hardin on his 75th birthday by reviewing the ecological problems with which he has grappled over so much of his lifetime. We will spend some time analyzing the important intellectual journey that led him to develop and advocate the logic he used in his 1968 paper, "Tragedy of the Commons," continuing unto his subsequent efforts to more completely develop the logic for the ecological ethics that we human beings need if we are to "survive with dignity."

*Abridged for this issue. A complete version will be published at a later date. Please address correspondence to Dr. Bajema, Department of Biology, Grand Valley State University, Allendale, MI 49401.

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GROWING UP IN THE MIDWEST

Garrett James Hardin was born April 21, 1915 in Dallas, TX. Looking back, Garrett viewed frequent family moves within the midwest and summers on his grandfather's Missouri farm as an advantage, as he "grew up an unconscious and natural anthropologist in my own culture" (Hardin, 1989).

Garrett contracted polio at age four, which left him a shortened and weakened right leg and ruled out three occupations he seriously considered entering while growing up—those of salesman, actor, and field geologist. Through reading *Popular Science* he developed an interest in science which withstood a close-to-disastrous experience with classroom science (Hardin, 1982b). During high school he enjoyed public speaking, drama and math.

STUDYING AT THE UNIVERSITY OF CHICAGO

Garrett Hardin was a bright student, earning three college scholarships. In the fall of 1932 he began attending two colleges—the University of Chicago in the daytime and the drama program at Chicago Musical College during the evening. The demands of being a good student at the University of Chicago soon led him to give up the night classes and his ambition of becoming a drama director.

Following his older brother's advice, "If you hear a good teacher, take his course or sit in on it, no matter what the subject," Garrett took a course from J. Harland Bretz, a geology professor who taught by the Socratic method. Garrett Hardin would have become a geologist if it had not required so much hiking. Fortunately, his freshman biology also was well taught and by the end of his sophomore year he decided to major in biology (Hardin, 1982a, p. 2-9).

The ecologist W. C. Allee became Hardin's faculty advisor and introduced him to concepts of population growth and its ecological limits. A course in evolution taught by Sewall Wright emphasized the interaction of chance effects and selection. Population growth experiments involving protozoa and especially Raymond Pearl's studies of the effect of culture medium on population growth led, after graduation in 1936, to a research assistantship at Stanford University for graduate work on the microbial ecology of single-celled protozoans.

LIFE AT STANFORD AND THE CARNEGIE INSTITUTION

Two individuals played an important role in Garrett Hardin's graduate education at Stanford University. Garrett took George Beadle's course in genetics, becoming his teaching assistant, and C. V. Van Niels' course at the marine biology station. Van Niel used the Socratic method, which influenced Garrett's own later teaching style.

Garrett Hardin received his Ph.D. from Stanford University in 1942. He then accepted a position at the Carnegie Institution where his knowledge of microbial ecology was applied to culturing algae for food. Garrett worked at the Carnegie Institution for four years but his heart was not in the business of trying to just temporarily solve population problems by increasing supplies. Garrett had learned Malthusian population theory from W. C. Allee: the ultimate solution has to involve decreasing the demand on supplies (Hardin, 1982b).

LIFE AS AN EDUCATOR

Dr. Hardin joined the biology department at the new University of California at Santa Barbara in 1946. There, he abandoned his research with protozoan cultures in the face of the heavy teaching load and lack of any research space, writing instead an introductory college biology textbook for W. H. Freeman & Co. The first edition of Hardin's classic text, *Biology: Its Principles and Implication* (1952; 1961; 1966) was published in 1949 under the original title, *Biology: It's Human Implication*. The text broke new ground by presenting biology through the teaching of the scientific method, i.e. the process by which theories are constructed, scientifically tested and evaluated. In *Philosophy of Teaching*, John Passmore (1980, p. 99, 106) referred to this textbook as exemplifying the ideal of teaching science as a process rather than an encyclopedic collection of facts.

The Biological Sciences Curriculum Study (BSCS) was organized in 1960 to improve science education in biology at the secondary level, and Dr. Hardin became a member of its Board of Directors. In 1989 Joseph McNerney, then President of the National Association of Biology Teachers and current Executive Director of the BSCS, in accepting the Association's award for distinguished service, acknowledged Garrett Hardin as one of those scientists who greatly influenced him.

Soon after coming to Santa Barbara, Hardin happened on the works of linguist Benjamin Lee Whorf. Whorf's work on the ambiguity of language

played a decisive role in Garrett's intellectual journey to becoming a critical thinker and a writer whose goal was "to make the ideas of others clear, both to students and to the general public" (Hardin, 1973, p. x).

Dr. Hardin has become one of the leading popularizers of the modern scientific understanding of biology and its scientific and moral implications for human beings. Through his lectures and writings, Garrett has forced more people to think about taboo subjects in biology than any other living biologist. Professor Garrett Hardin deserves to be honored if for no other reason than accomplishing this difficult task.

Filters Against Folly, Dr. Hardin's most recent book, contains his proposals for developing critical thinking skills that will enable us to survive "despite economists, ecologists and the merely eloquent." Professor Hardin identifies three major filters against folly that can be used to guard against the blindness, short-sightedness, or sheer idiocy that so often comes disguised as eloquence or expertise.

The *literacy filter*, "the ability to understand what words really mean," can be used to understand how language is used not only to promote thought but to prevent it. While his discussion of the "verbal diarrhea" or the merely eloquent and the misuse of poetic license is fascinating, it is Hardin's discussion of the use of such discussion-stoppers as "infinite," "inexhaustible," "non-negotiable," "self-evident," "must" and "imperative" to preempt analysis that is most revealing. Hardin also asks why talk is always about shortages of supply rather than longages of demand or of people. He concludes that it is in large part due to the fact that virtually no one individually profits from supplying *less*.

In a moment of frustration Mark Twain is reported to have shouted, "There are lies, damned lies and statistics!" In a world where people are very numerous and where many people use numbers to convince others to behave in certain ways, a responsible citizen has no choice but to become numerate as well as literate. The *numeracy filter* involves the ability to measure and interpret quantities, proportions and rates. Hardin points out that human beings have all too often learned how to use the resources of literacy to hide numbers and the need for numerate analyses. He draws attention to the problems created by always thinking solely in terms of dichotomies (safe vs. unsafe, pure vs. unpure) rather than in terms of relative risks and benefits. Quantities, ratios, rates and duration of time all matter. Professor Hardin also discusses the limitations of numeracy: an accurate mathematical analysis does not compensate for flawed premises.

Professor Hardin is at his best discussing the *ecology filter* because he has spent the last forty years studying ecology and evolution and their bioethical dimensions. A more comprehensive development of "ecol-

acy"—the ability to pursue the question AND THEN WHAT? so that the effects of interactions of systems over time can be taken into account—is necessary if we are not to fall victim to the forces we unleash and are unwilling or unable to control. Engineering mentality which too often thinks in terms of a single cause and a single effect needs to be replaced by the ecolacy filter, which takes into account real interactions including effects that affect their causes (feedback loops).

In this age of increasing concern over how to better develop critical thinking skills, one must go beyond the three R's. We need the skills to use effectively the three intellectual filters of literacy, numeracy and ecolacy. There is no better place to start than the paperback edition of Professor Hardin's book *Filters Against Folly*.

POPULARIZING ADAPTIVE EVOLUTION BY SELECTION THEORY

Professor Hardin's major contribution to human ecology has been application of the Darwinian theory of selection to ongoing human genetic and cultural evolution. Hardin has worked hard at persuading fellow humans that evolution by selection is unavoidable, and that the implications for human interactions with each other and with the rest of the environment should be explored.

Nature and Man's Fate. Dr. Hardin's first major attempt to bring the reading public abreast of current thought in evolutionary theory and to show them its implications for the future was published as *Nature and Man's Fate* (Hardin, 1959). Here he wrestled with Malthusian population theory and Darwinian selection theory, expanding on ideas initially learned from the ecologist W. C. Allee and the evolutionary biologist Sewall Wright.

Professor Hardin wrote in the Prologue to *Nature and Man's Fate* that:

It doesn't much matter whether you think man was created out of the dust six thousand years ago or came from the apes a million years earlier; whether the story of Noah's Ark is true, or dinosaurs once lived. Believe what you will of evolution in the past; but you had jolly well better believe it will take place in the future if you hope to make political decisions that will give your descendants a reasonable chance to exist. The principles of evolution are inescapably relevant to the analysis of man's predicament (pp. vii-viii).

He continued:

To understand the present we must know the past. With John Maynard Keynes I believe that a "study of the history of opinion is a necessary preliminary to the emancipation of the mind" (p. ix).

Nature and Man's Fate draws attention to the important fact that progress in science is in large part a process of error and detection of error. The book focuses on the inescapability of competition-driven selection—the foundation of the modern evolutionary synthesis and of Hardin's analysis of evolution and its implications for human beings.

Essays such as "In Praise of Waste," "Liberalism and the Spectre of Competition," and "Eugenics: Is Man Part of Nature?" carefully address numerous taboo subjects within the framework of the impotence principles of evolutionary science; that is, the psychological need, or wish, for the world to be unbounded is challenged by:

- the impotence of Lamarckian beliefs in the face of Mendelian genetics;
- the impotence of Liberal beliefs in egalitarian results in the face of the inescapableness of biological competition in a world with limited resources and mates;
- the impotence of those who seek to eliminate all waste in the face of the success of Darwinian selection operating on genetic/cultural waste—what is usually called variation (pp. 306-310).

The discussion of competition is classic in that it is uncompromisingly grounded in science yet Hardin points out how one can make competition more humane: competition "cannot be escaped; it can only be altered in the form it takes" (p. 252). He does not commit the "naturalistic fallacy" of arguing from "is" to "ought." While "we can never eliminate competition," Garrett states that we can change the rules somewhat and the pay-off:

Competition is to be found in the subdued and pious Quaker meeting just as surely as it is on the bloodiest of battlefields. The device of love may be found in its arsenal side by side with weapons of steel. Our problem is not to avoid the unavoidable—competition—but to choose our weapons. In seeking the means that are most commensurate with human comfort, pleasure and dignity we cannot necessarily trust first impressions or traditional moral standards. We will need the deepest insights of psychology and anthropology to enable us to choose well (p. 255).

Competition for resources can take many forms. Consequently Professor Hardin pointed out:

The elimination of warfare by military means is tolerable only in a world that has outlawed reproductive warfare. The competitive use of human gonads in a pacificistic world is every bit as vicious and productive of suffering as is the militaristic use of atomic bombs (p. 322).

The generation and testing of new variations is important with respect to both genes and ideas. Hardin stresses the importance of free speech within a community and the freedom to err (p. 323) as they are the ultimate source of new ideas and combinations of ideas upon which selection can operate to produce progress. Progress in science and technology can be used to improve the human condition.

Hardin concludes with asking, "How is man to control his own evolution?" The difficulty is the greater because too many individuals deny the reality of human evolution occurring through natural, or Darwinian, selection. Hardin points out that the reality and importance of selection "is temporarily obscured by the increasing of the size of the feast [world fisheries and agricultural yield] through technological advances, but the increase is only a passing phase which must soon come to an end" (pp. 337–338).

While many of us appreciated the critical scientific thinking that is the hallmark of *Nature and Man's Fate*, the book was not that well received by the academic community. Garrett Hardin has always been guilty of the crime of being a critical thinker who can express ideas far more clearly than most. But he was also guilty of another, emotionally more important, error: discussion of too many socially taboo subjects at one time—all in one book!! Fortunately *Nature and Man's Fate* was liked well enough that it was republished in a paperback edition.

Garrett now became an active stalker of those taboos he had discussed in *Nature and Man's Fate*. One strategy that he employed was to locate and reprint numerous important writings in *Population, Evolution and Birth Control: A Collage of Controversial Readings*, which first appeared in 1964. Many of the writings that were to play so important a role in the intellectual development of Hardin's 1968 essay "The Tragedy of the Commons" were collected here.

For example, Garrett gave new life to Kenneth Boulding's summary of the dismal and utterly dismal theorems of economics, which point out that technology cannot provide more than just a temporary solution for population/resources/environment problems:

. . . the famous dismal theorem of economics . . . if the only check on the growth of population is starvation and misery, then no matter how favorable the environment or how advanced the technology the population will grow until it is miserable and starves. The theorem, indeed, has a worse corollary which has been described as the utterly dismal theorem. This is the proposition that if the only check on the growth of population is starvation and misery, then any technological improvement will have the ultimate effect of increasing the sum of human misery, as it permits a larger population to live in precisely the same state of misery and starvation as before the change . . . (Boulding, 1956 in Hardin, 1969, p. 81).

The passages from William Lloyd's discussion of the problems of resource management on the English commons and from Charles Galton Darwin's summary of how the use of contraceptives by some of the population generates selection for *homo progenetivictus* replacing *homo contraceptiens* are also reprinted in *Population, Evolution and Birth Control* (Hardin, 1964, 1969).

C. G. Darwin's analysis provided inspiration for Garrett's (1963a) thoughts concerning "A Second Sermon of the Mount," in which he enunciated the principle "Blessed are the women that are irregular, for their daughters shall inherit the earth." Professor Hardin pointed out that the rhythm method of birth control is self-defeating: "If there is even a tiny hereditary element in their irregularity (as there surely must be), natural selection would then ultimately produce a world populated only by irregular women. Tidings of Darwin should be carried to Rome" (Hardin, 1963a, p. 371). Garrett, armed with selection theory, has been more than just a taboo stalker. He is one of the best scientific slayers of poorly thought-out political/theological ideas our generation has produced.

GARRETT HARDIN BECOMES AN ACTIVIST

Abortion Reform

James Newman's book review of *Abortion in the United States* published in the January 1959 issue of *Scientific American* greatly affected Dr. Hardin's professional and personal life (Hardin, 1973). His interest in birth control made the abortion taboo a natural subject.

The autumn 1963 day after Garrett delivered his first public lecture on abortion—an analysis and recommendations for abortion reform—in a

University of California (Santa Barbara—UCSB) lecture attended by more than 900 persons, Garrett began receiving telephone calls from women seeking help in obtaining a safe abortion. Garrett became an agent in the underground railroad for women seeking safe abortions. He also became a member of the board of National Association for the Repeal of Abortion Laws, which was instrumental in bringing *Roe v. Wade*, the 1973 case which made anti-abortion laws unconstitutional, to the U.S. Supreme Court. Looking back in 1983, Garrett noted that, "Abortion sure altered my life, because I'd never intended to be an activist" (Hardin, 1982, pp. 5-11).

Garrett became the intellectual spokesman for the abortion reform movement as the result of his UCSB "Abortion and Human Dignity" lecture. It was reprinted by the Society for Humane Abortion after he gave essentially the same lecture at the University of California (Berkeley—UCB) in 1964. Garrett wrote other papers advocating abortion reform (Hardin, 1967, 1968a) as well as the book *Mandatory Motherhood: The True Meaning of "Right to Life"* (1974b).

One question asked over and over again was, "When does life begin?" Garrett would reply that biologists think that life began more than two billion years ago; but now life is merely passed on from one cell to another. The question we should ask and answer is, "When do we want to call it a human life?" Human personhood is more than just life. Garrett drew an analogy between an architect's blueprints and the information contained in DNA.

Dr. Hardin published his most recent views on the subject of abortion in 1982. He also was a supporter of the *amicus curiae* brief filed in *Webster v. Reproductive Health Services* by Population-Environment Balance and seven other environmental groups (Lassow, 1989). In this 1989 case, the U.S. Supreme Court considered the constitutionality of a Missouri law restricting access to abortion.

Tragedy of the Commons

The Centennial celebration of the publication of Charles Darwin's *Origin of Species* in 1959 led Charles' grandson, Charles Galton Darwin (1960), to apply his grandfather's theory of adaptive evolution by selection to predict that voluntary population control policies select for their own failure. Garrett Hardin, impressed with both the scientific logic and the political implications of C. G. Darwin's insight, developed a more general ecological version of these principles in a paper entitled "The Tragedy of the Commons" (Hardin, 1968b).

It has been said that the road to confusion is paved with metaphors.

Nonetheless, short pithy phrases can dramatize problems and focus attention on the costs and benefits of proposed solutions. Professor Hardin invented the metaphoric tragedy of the commons in an attempt to communicate the need to modify the ethical basis of our decision-making if we are to adequately cope with our population/resources/pollution problems.

Dr. Hardin used the tragedy of the commons metaphor to describe the human misery that is predicted to ultimately occur whenever the right of a person or group to use a resource held in common is not matched by an operational responsibility to care for the resource (or the consequences of using the resources). The commons owned by English villages and available for all citizens to graze their cattle was proposed as the classic example of a commons. For the purposes of metaphor, rules governing the use of this commons were stated as: first, each herdsman may pasture as many cattle as he wishes on the commons; and second, the benefit from the growth of the cattle goes to the individual owners of the cattle.

In such an unmanaged commons, one or more herdsmen seek to maximize their private gain by adding cows to the herd. Ultimately this causes the herd to reach the population size at which the carrying capacity of the pasture is damaged by overgrazing and the resulting environmental deterioration brings ruin to all. Thus rational behavior at the individual level leads to tragic consequences for the community as a whole.

Professor Hardin (1977) points out that the unmanaged commons is but one of four political systems for distributing the costs and benefits of using environmental resources. He compares consequences of the unmanaged or poorly managed commons with the outcomes of privatism (where individually/corporately produced costs such as ecologically damaging wastes cannot be socialized), socialism (defined by Hardin as an adequately managed commons) and altruism (which is interesting but unworkable as long as there are individuals in the population working in their own self interest). The unmanaged or poorly managed commons enables individuals or groups to privatize the benefits while socializing the costs of using finite resources. It is a selective system that rewards the very persons or groups that increase the rate at which they (and/or their descendants) use commonly held resources.

Consequently the rate at which a finite resource is used increases and ultimately becomes so great that it approaches and soon exceeds the carrying capacity of the environment, i.e., the maximum population size that the environment can sustain over extended time. The carrying capacity can be decreased by human behaviors that result in soil erosion or pollution (acid rain for example). An illusion that the carrying capacity of our environments have permanently increased is created when fixed supplies of

fossil fuels are depleted and renewable biological resources are harvested at a rate faster than they are being regenerated—as is presently occurring.

Crowding sets the stage for the tragedy of the commons to occur. Growth in our numbers or growth in our affluent lifestyles or some combination of both generate environmental stress which exceeds the carrying capacity of the environment, causing a deterioration in the future carrying capacity.

One need only assume that at least some human beings are egotists operating in their own self-interest for cultural selection to produce tragedy in an unmanaged commons. Selfish behavior in such a system is rewarded with benefits. The unmanaged commons establishes a social system that selects for its own failure, that is, for the adoption by other individuals of very selfish behavior that ultimately brings about tragedy.

Societies that try to regulate the use of resources in a commons by appealing to conscience (“voluntarism” or “jawbone responsibility”) merely generate selection favoring people who either do not have a social conscience or have consciences that tell them to do otherwise—individuals who, to use the words of Henry David Thoreau, march to a different drummer. In other words, appeals to conscience in a commons sets up a selective system that favors the reproduction of the ideas and genes of those individuals who reject society’s pleas to voluntarily control the rate at which they (and their descendants) use resources held in common. The tragic effects of cultural selection for individual behaviors that abuse the environment become so great that the question is not *whether* society should abandon the commons political system but rather when and how. Professor Hardin concludes that the poorly managed/unmanaged commons must be abandoned in favor either of privatism or socialism where the commons is managed in ecologically sustainable ways.

One of the most controversial of Dr. Hardin’s conclusions deals with human reproduction. Since the effect of coupling “the concept of freedom to breed with the belief that everyone born has an equal right to the commons” locks “the world into a tragic course of action,” Hardin contends that the commons system with respect to childbearing has to be abandoned also (Hardin, 1972, pp. 188-189).

The private enterprise system of childbearing and childbearing generates so much misery among innocent children that Professor Hardin does not consider it to be an ethically acceptable option for modern societies. Consequently, he contends that a society which has been guaranteeing the survival, health and education of children must also have the power to decide how many children shall be born. In other words, societies will ultimately have to adopt coercive policies if they are to succeed in produc-

ing individual reproductive responsibility. The kind of coercion Hardin envisions is mutual coercion, mutually agreed upon by the majority of the people affected (Hardin, 1968b, 1972, 1977, 1985).

Just how successful has Professor Hardin been in breaking the social taboo on publicly applying selection theory to human problems? If one measures success by the number of times the "Tragedy of the Commons" has been cited (Anonymous, 1979), the number of times it has been reprinted in anthologies, or that in 1971 the Biological Sciences Curriculum Study made it into an educational movie starring Garrett, or that it has made Garrett famous, the answer is very successful.

When one measures Dr. Hardin's success by the extent to which other scholars have been motivated to apply Darwinian selectionist logic to human problems of resource use, the answer is that few have been willing to publicly apply it. Study of the cultural evolution of ideas and/or genetic evolution of DNA is not taboo, but application to carrying capacity problems is. Sociobiologists who specialize in applying selection theory to the evolution of behavior rarely, if ever, mention Charles Galton Darwin's application of selection theory nor Garrett Hardin's more popular and more general "Tragedy of the Commons" version. Only one author (Bajema, 1978), in the three volume *Encyclopedia of Bioethics*, discusses the tragedy of the commons selectionist logic and its implications for policies that rely on voluntarism.

The tragedy of the commons selectionist logic has been most frequently applied to the management of such natural resources as fisheries, forests and pollutable reservoirs such as air and water (Baden and Stroup, 1977; Clark, 1973; McCay & Acheson, 1987; Repetto & Gillis, 1989). Professors John Baden and Garrett Hardin teamed up to edit *Managing the Commons* (1977), a book which draws attention to ecological and political consequences of cultural selection for the particular resource-using behaviors which are generated by particular political systems.

Professor Hardin, through his numerous lectures, essays and books (Hardin, 1972, 1973, 1977, 1978, 1985; Hardin and Baden, 1977), has had and will continue to have a major impact on analysis of political problems. For example, Professor Hardin (1963, p. 80) replaced the rather naive ecological statement that "everything is connected to everything else" with one sentence that virtually demands that one search any action or inaction for its unintended effects. This sentence, "WE CAN NEVER DO MERELY ONE THING," is so powerful a stimulus to ecologically important thinking that the editors of *Fortune Magazine* wrote:

If a prize were to be awarded for the most illuminating single sentence authored in the past ten years, one of the candi-

dates would surely be Hardin's Law . . . It says, with deceptive simplicity, "You can never do merely one thing." This is something like a very clean glass door—you're not sure at first glance whether anything is there. But those seven seemingly casual words express a profound truth about human affairs (Editors, 1974, p. 56).

Since "we can never do merely one thing," Dr. Hardin contends that we need to be asking the question "AND THEN WHAT?" over and over again to more accurately estimate the consequences—intended and other—of what we do. The question "AND THEN WHAT" highlights the value of selectionist theory for evaluating the results of managing renewable and nonrenewable resources under alternate political systems.

Scholars have an obligation to summarize and evaluate the *current* version of a theory that a scientist is advocating. Garrett Hardin incorporated the fact that there are two kinds of commons—a "managed commons", a form of socialism where resources either can be managed in an ecologically sustainable way or ecologically mismanaged, and an "unmanaged commons", a form of socialism which selects the very behavior that leads to tragic outcomes—into his theory more than ten years ago (Hardin, 1977, Hardin and Baden, 1977). Yet scholars persist in criticizing outdated, or their own misinterpretations of Hardin's application of selectionist logic (Cox, 1985; McCay & Acheson, 1987; Reader, 1988). One misconception is that selection will operate to bring tragedy only if every individual is an egotist operating in his own self-interest. Not so; but such behavior does quickly spread because selection in voluntarist systems favors "cheaters." Cheaters are rewarded with resources. Consequently, more and more individuals in a society adopt the ecologically unsustainable cheater behavior and the tragedy results.

Those wishing to evaluate Professor Hardin's use of selectionist logic to predict how a particular political system will affect human behavior and use of resources should consult his 1985 book *Filters Against Folly*. There, for example, they will read about the DOUBLE C—DOUBLE P game, the tragic distribution system that couples commonized costs with privatized profits and thus generates selection for its own failure.

DEVELOPING AN ENVIRONMENTALLY BASED HUMANIST ETHIC

Garrett Hardin has gone far beyond linking major political systems to the selective multiplication of resource-using behaviors which undermine the carrying capacity of the environment and thus the subsistence base of

future generations. He proposes that we adopt a humanist environmental ethic based on comparing the consequences of a proposed action or inaction with the results from what currently is being done.

"In Praise of Waste," the concluding chapter of *Nature and Man's Fate* (1959), contains Professor Hardin's first major discussion of an ideal humanist ethic. It is founded upon freedom of speech because this, among its other benefits, generates new ideas and combinations of ideas on which cultural selection can operate to bring about scientific and technological progress. The following passage, an echo of the conclusion of Darwin's *Origin of Species*, concludes *Nature and Man's Fate*:

We know now that a completely planned heaven is either impossible or unbearable. We know that it is not true that design can come only out of planning. Out of luxuriant waste, winnowed by selection, come designs more beautiful and in greater variety than ever man could plan. This is the lesson of Nature that Darwin has spelled out for us. Man, now that he makes himself, cannot do better than to emulate Nature's example in allowing for waste and encouraging novelty. There is grandeur in this view of life as a complex of cybernetic systems that produce adaptedness without foresight, design without planning, and progress without dictation. From the simplest means, man, now master of his own fate, may evolve societies of a variety and novelty—yes, and even of a beauty—that no man living can now foresee (p. 346).

The failure of both *laissez faire* capitalism and classic Marxism in avoiding ecological degradation and resulting tragic consequences for future generations of humans beings led Professor Hardin to propose a fundamental extension in morality. In "The Tragedy of the Commons," he developed a secular ethics that takes into account that at least some individuals operate in their own self-interest (exactly what one would expect on the basis of Darwinian adaptive evolution by selection theory) and that places the actions of individuals in an ecological context. The ecological ethic Hardin champions is system-sensitive to the state of the environment at the time the moral value of any particular action/inaction is determined. Professor Hardin expanded the situation-based humanist ethics developed by the theologian Joseph Fletcher to include ecological effects on individuals in the future—other individuals in present and future generations. Hardin's ecologically based consequentialist ethic uses the following rule: action/inaction is determined to be moral or immoral on the basis of its consequences not merely for the current participants but for individuals in the future.

Garrett Hardin expanded, revised and updated his ideas concerning ethics in *Exploring New Ethics for Survival: The Voyage of the Spaceship Beagle* (1972a), where he inserted scientific logic within the framework of a science-fiction parable to help his fellow citizens understand the momentous questions that are involved in population control, a problem that he contends can be solved only by restricting some human freedoms in order to preserve others.

The short time span and selfish dimensions of much of traditional ethics led Professor Hardin (1974c) to add a phrase to the theologian Martin Buber's classic "I-Thou" frame of reference. The ethical frame of reference that Dr. Hardin champions is "I-Thou AND THEN WHAT?" Garrett Hardin applied the "tough love" logic of triage to foreign aid in his 1974 essay on "Lifeboat Ethics," to which the editor of *Psychology Today* added the subtitle "The Case Against Helping the Poor" without consulting Dr. Hardin (1978, * p. 242). Professor Hardin is not opposed to providing the poor or anyone else with information that they can use to improve their situation. What Dr. Hardin realizes and his critics do not is that one cannot cure a cancer (overpopulation) by feeding it (foreign aid) or transporting some of its cells elsewhere (emigration). Dr. Hardin had summarized the logic of his position fifteen years earlier, writing:

In the realm of inter-community affairs an analogous moral principle must be espoused—freedom to err. Within a single community there cannot be freedom of action for individual members. It will not do, for example, for a community that disapproves of murder, to wink at murder by individuals who want to be free. But, as between communities, there must be freedom for each community to determine its own moral principles. Other communities must be free not only to live morally (by our standards) but also to live immorally (again by our standards). Put bluntly, every community must be free to go to hell in its own way, so long as its action does not endanger the continued existence of other communities. A community must, for instance, enjoy the freedom to breed itself into a state of starvation, if it so wishes, without a finger being lifted elsewhere to interfere with its stupidity. To interfere, to save it from the consequences of its own immorality is but to postpone and aggravate the problem, and to spread the moral infection. By not interfering, however, we make it more probable that a community will see its error in time, will see that a moral principle of unlimited reproduction is incompatible with the principle of unlimited use of medicine in the prevention of crowd diseases. If

*Second edition of *Stalking the Wild Taboo*.

we have any responsibility at all with respect to other communities, it is only because we ourselves failed in the past to see the cultural incompatibility of the above-mentioned principles and freely gave of our medicine without at the same time seeing to it that gift was coupled with the principle of birth limitation (1959, pp. 323-324).

On numerous occasions Professor Hardin (1979, p. 1; 1981, p. 45,) has contended that what we need are "thinking rather than bleeding hearts," and that each nation has the moral obligation to become self-reliant. (Note, Dr. Hardin did not say "self-sufficient"). Hardin encourages ecologically comprehensive thought by championing the "sanctity of the carrying capacity of the environment" as an ethical concept which is more humane in its consequences for human life than "sanctity of the individual" (Hardin, 1977; 1985).

In his 1982 essay "Ending the Squanderarchy," Professor Hardin outlines some of the important ethical changes that a squanderarchy like the United States will have to make in order to become an ecologically sustainable conservationist society. Rather than expect the transition to come directly, Hardin is a "trend" pessimist: for the U.S. and other squanderarchies, the probable pathway to a conservationist society is through a dark age—a period of poverty and chaos before the more humane, ecologically sustainable state is reached.

Garrett Hardin's efforts to find the most humane solution to the human ecological predicament led the American Humanist Association to choose him as recipient of the 1989 Humanist Distinguished Service Award.

CONCLUSION

We temporary fellow travelers on the Planet Earth are fortunate to have in our midst Garrett Hardin, a scholar who has spent most of his life helping citizens gain a better understanding of the implications that evolutionary processes have for their fate.

There are those shallow thinking optimists who merely extrapolate desirable trends (making some trends desirable by choosing the "appropriate" time frame) or contend that since humans have time and again proven their resourcefulness, they have the capacity to produce a technical fix that will solve every human problem.* In contrast, Dr. Hardin has developed a

*See also critiques by Ehrlich & Ehrlich, 1982; and Daly, 1982 and in this volume.

well-tested theory-driven humanist ethic that takes real world constraints into account. There are ecological limits to growth in the use of resources and pollution of the environment. The real world is inhabited by people who evolve under conditions which favor ideas and individuals that privatize profits and commonize costs. Consequently, political systems that attempt to regulate the use of resources by appeals to simple conscience produce tragic ecological consequences for human beings. Professor Hardin has not only drawn our attention to these problems but also has evaluated alternate ways for solving the ecological problems we face.

If we human beings succeed in resolving our population/resources/environment problems, it will be in large part because of having finally learned to use the ecological logic that Garrett Hardin has so ably championed. Only by asking and scientifically answering the question "And Then What?" can we meaningfully evaluate the consequences of choices that will determine if we are to survive with dignity on this planet. In "The Tragedy of the Commons," "Lifeboat Ethics," "Do Trees Have Legal Standing?," "Limits to Altruism," "Carrying Capacity as an Ethical Concept," "Squanderarchy" and other numerous essays Dr. Hardin has drawn our attention to the consequentialist, humanist dimensions of our population/resources/environment crunch. His analysis of alternate ethical systems gives due weight to the rights of future generations.

It is appropriate that we honor Garrett Hardin for his contribution to the quality of human life on this planet in addition to celebrating with him his 75th birthday. His professional life has been a full one, enriched by his wife Jane, who also has served as an involved participant with whom Garrett "field tested" many of his thoughts. We honor Dr. Garrett Hardin, Professor Emeritus of Human Ecology, University of California at Santa Barbara, for helping us to become more-critical thinkers and more considerate of future generations, whose claims we lay alongside those who are alive today. The Earth and all the creatures on it now and in the future are truly fortunate to have such a literate, numerate and ecolate humanist champion as Garrett James Hardin.

HONORS AND AWARDS RECEIVED BY GARRETT JAMES HARDIN

- 1930** *Chicago Daily News* essay winner
1932 Scholarship, University of Chicago
1932 Scholarship, Chicago College of Music
1952-53 Ford Fellow, California Institute of Technology

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- 1963** Professor of Human Ecology, University of California, Santa Barbara
- 1964** Visiting Professor, University of California, Berkeley
- 1964** Remson Bird Lecturer, Occidental College
- 1966** Faculty Research Lecturer, University of California, Santa Barbara
- 1970** Visiting professor, University of Chicago
- 1970** Nieuwland Lecturer, University of Notre Dame
- 1970-71** National Visiting Lecturer, Phi Beta Kappa
- 1972** Messenger Lecturer, Cornell University
- 1972-73** National Lecturer, Sigma Xi
- 1973** Hall of Fame Award, Friends of the Earth
- 1973** Elected Member of American Academy of Arts and Sciences
- 1974** Elected Member of American Philosophical Society
- 1974** Aquinas Foundation Lecture, Drew University
- 1974** Tracey I. Storer Lecturer, University of California, Davis
- 1975** Elected Honorary Member, National Association of Biology Teachers
- 1975** Honorary Doctor of Humanities Degree, University of Puget Sound
- 1975-76** Member, Advisory Committee of Ethical and Human Value Implications of Science and Technology, National Endowment for the Humanities/National Science Foundation
- 1976** Patten Foundation Lecturer, Indiana University
- 1977** Honorary Doctor of Humane Letters, Northland College
- 1978** Lecturer, Dartmouth College (chosen by students)
- 1979** Jesse and John Danz Lecturer, University of Washington
- 1980** Margaret Sanger Award, Planned Parenthood Federation of America
- 1986** Distinguished Service Award, American Institute of Biological Sciences
- 1987** Mack Lipkin Lecturer, American Museum of Natural History
- 1989** Humanist Distinguished Service Award, American Humanist Association
- 1990** Federation of Americans for Immigration Reform Award
- 1990** Population-Environment BALANCE Carrying Capacity Award

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