The problem of environmental degradation seems to be falling into a curious focus. Despite massive public support for environmentalist measures — as witness the positive public response in recent state referendums on such issues — we are being warned about a backlash against “extremists” who are raising “radical” demands for arresting environmental degradation. Much of this “backlash” seems to be generated by industry and by the White House, where Mr. Nixon complacently assures us that “America is well on the way to winning the war against environmental degradation; well on the way to making our peace with nature”. This rhetoric is suspiciously familiar; presumably we are beginning to see the “light” at the end of the environmental tunnel. In any case, advertising campaigns by the petroleum, automobile, lumber, and chemical industries are urging Americans to be more “reasonable” about environmental improvements, to “sensibly” balance “benefits” against “losses”, to scale down norms for cleaner air and water that have already been adopted by the Environmental Protection Administration, to show “patience” and “understanding” for the ostensibly formidable technical problems that confront our friendly neighborhood industrial oligopolies and utilities.

I will not try, here, to discuss the scandalous distortions that enter into propaganda of this kind. Many of you are already familiar with the recent study by a committee of the National Academy of Sciences that accuses the automobile industry of concentrating (in the words of a New York Times report) on the “most expensive, least satisfactory means” of meeting the 1975 Federal exhaust emission standards. As to the pious rhetoric from the White House, Mr. Nixon’s efforts to make “peace” with nature seem to be several cuts below his efforts to produce peace in Indonesia. As the Times
opines editorially, Mr. Nixon's statement "is totally at variance with the facts..... The air over the nation's cities is getting only marginally cleaner, if at all. Every major river system in the country is badly polluted. Great portions of the Atlantic Ocean are in danger of becoming a dead sea. Plastics, detergents, chemicals and metals are putting an insupportable burden on the biosphere. The land itself is being eroded, blighted, poisoned, raped."

Far from adhering to the claim that many environmentalist demands are too "radical", I would argue that they are not radical enough. Confronted by a society that is not only polluting the planet on a scale unprecedented in history, but undermining its most fundamental biogeochemical cycles, I would argue that environmentalists have not posed the strategic problems of establishing a new and lasting equilibrium with nature. Is it enough to stop a nuclear plant here or a highway there? Have we somehow missed the essential fact that environmental degradation stems from much deeper sources than the blunders or ill-intentions of industry and government? That to sermonize endlessly about the possibility of environmental apocalypse — whether as a result of pollution, industrial expansion, or population growth — inadvertently drops a veil over a more fundamental crisis in the human condition, one that is not exclusively technological or ethical but profoundly social? Rather than deal again with the scale of our environmental crisis, or engage in the easy denunciation that "pollution is profitable", or argue that some abstract "we" is responsible for producing too many children or a given industry for producing too many commodities, I would like to ask if the environmental crisis does not have its roots in the very constitution of society as we know it today, if the changes that are needed to create a new equilibrium between the natural world and the social do not require a fundamental, indeed revolutionary, reconstitution of society along ecological lines.

I would like to emphasize the words "ecological lines". In trying to deal with the problems of an ecological society, the term "environmentalism" fails us. "Environmentalism" tends increasingly to reflect an instrumentalist sensibility in which nature is viewed merely as a passive habitat, an agglomeration of external objects and forces, that must be made more serviceable for human use irrespective of what these uses may be. "Environmentalism", in effect, deals with "natural resources", "urban resources", even "human resources". Mr. Nixon, I would suppose, is an "environmentalist" of sorts insofar as the "peace" he would establish with nature consists of acquiring the "know-how" for plundering the natural world with minimal disruption of the habitat. "Environ-
mentalism” does not bring into question the underlying notion of the present society that man must dominate nature; rather, it seeks to facilitate that domination by developing techniques for diminishing the hazards caused by domination. The very notion of domination itself is not brought into question.

Ecology, I would claim, advances a broader conception of nature and of humanity’s relationship with the natural world. To my thinking, it sees the balance and integrity of the biosphere as an end in itself. Natural diversity is to be cultivated not only because the more diversified the components that make up an ecosystem, the more stable the ecosystem, but diversity is desirable for its own sake, a value to be cherished as part of a spiritized notion of the living universe. Ecologists have already pointed out that the more simplified an ecosystem — as in arctic and desert biomes or in monocultural forms of food cultivation — the more fragile the ecosystem and more prone it is to instability, pest infestations, and possible catastrophes. The typically holistic concept of “unity in diversity”, so common in the more reflective ecological writings, could be taken from Hegel’s works, an intellectual convergence that I do not regard as accidental and that deserves serious exploration by contemporary neo-Hegelians. Ecology, furthermore, advances the view that humanity must show a conscious respect for the spontaneity of the natural world, a world that is much too complex and variegated to be reduced to simple Galilean physico-mechanical properties. Some systems ecologists notwithstanding, I would hold with Charles Elton’s view that “The world’s future has to be managed, but this management would not be like a game of chess... (but) more like steering a boat”. The natural world must be allowed the considerable leeway of a spontaneous development — informed, to be sure, by human consciousness and management as nature rendered self-conscious and self-active — to unfold and actualize its wealth of potentialities. Finally, ecology recognizes no hierarchy on the level of the ecosystem. There are no “kings of the beasts” and no ”lowly ants”. These notions are the projections of our own social attitudes and relationships on the natural world. Virtually all that lives as part of the floral and faunal variety of an ecosystem plays its coequal role in maintaining the balance and integrity of the whole.

These concepts, brought together in a totality that could be expressed as unity in diversity, spontaneity, and complementarity, comprise not only a judgement that derives from an “artful science” or “scientific art” (as I have described ecology elsewhere); they also constitute an overall sensibility that we are slowly recovering from a distant archaic world and placing in a new social context. The notion
that man is destined to dominate nature stems from the domination of man by man — and perhaps even earlier, by the domination of woman by man and the domination of the young by the old. The hierarchical mentality that arranges experience itself — in all its forms — along hierarchically pyramidal lines is a mode of perception and conceptualization into which we have been socialized by hierarchical society. This mentality tends to be tenuous or completely absent in non-hierarchical communities. So-called "primitive" societies that are based on a simple sexual division of labor, that lack states and hierarchical institutions, do not experience reality as we do through a filter that categorizes phenomena in terms of "superior" and "inferior" or "above" and "below". In the absence of inequality, these truly organic communities do not even have a word for equality. As Dorothy Lee observes in her superb discussion of the "primitive" mind, "equality exists in the very nature of things, as a byproduct of the democratic structure of the culture itself, not as a principle to be applied. In such societies, there is no attempt to achieve the goal of equality, and in fact there is no concept of equality. Often, there is no linguistic mechanism whatever for comparison. What we find is an absolute respect for man, for all individuals irrespective of age and sex".

The absence of coercive and domineering values in these cultures is perhaps best illustrated by the syntax of the Wintu Indians of California, a people Lee apparently studied at first hand. Terms commonly expressive of coercion in modern languages, she notes, are so arranged by the Wintu that they denote cooperative behavior. A Wintu mother, for example, does not "take" her baby into the shade; she "goes" with it into the shade. A chief does not "rule" his people; he "stands" with them. In any case, he is never more than their advisor and lacks coercive power to enforce his views. The Wintu "never say, and in fact they cannot say, as we do, 'I have a sister', or a 'son', or 'husband' " Lee observes. "To live with is the usual way in which they express what we call possession, and they use this term for everything they respect, so that a man will be said to live with his bow and arrows".

"To live with" — the phrase implies not only a deep sense of mutual respect and a high valuation of individual voluntarism; it also implies a profound sense of oneness between the individual and the group. The sense of unity within the group, in turn, extends by projection to the relationship of the community with the natural world. Psychologically, people in organic communities must believe that they exercise a greater influence on natural forces than is afforded by their relatively simple technology, an illusion they
acquire by group rituals and magical procedures. Elaborate as these rituals and procedures may be, however, humanity’s sense of dependence on the natural world, indeed, on its immediate environment, never entirely disappears. If this sense of dependence may generate abject fear on an equally abject reverence, there is also a point in the development of organic society where it may generate a sense of symbiosis, more properly, of mutualistic interdependence and cooperation, that tends to transcend raw feelings of terror and awe. Here, humans not only propitiate powerful forces or try to manipulate them; their ceremonials help (as they see it) in a creative sense: to multiply food animals, to bring changes in season and weather, to promote the fertility of crops. The organic community always has a natural dimension to it, but now the community is conceived to be part of the balance of nature — a forest community or a soil community — in short, a truly ecological community or ecocommunity peculiar to its ecosystem, with an active sense of participation in the overall environment and the cycles of nature.

This outlook becomes evident enough when we turn to accounts of ceremonials among peoples in organic communities. Many ceremonials and rituals are characterized not only by social functions, such as initiation rites, but also by ecological functions. Among the Hopi, for example, the major agricultural ceremonies have the role of summoning forth the cycles of the cosmic order, of actualizing the solstices and the different stages in the growth of maize from germination to maturation. Although the order of the solstices and the stages in the growth of maize are known to be predetermined, human ceremonial involvement is integrally part of that predetermination. In contrast to strictly magical procedures, Hopi ceremonies assign a participatory rather than a manipulatory function to humans. People play a mutualistic role in natural cycles: they facilitate the workings of the cosmic order. There ceremonies are part of a complex web of life which extends from the germination of maize to the arrival of the solstices. “Every aspect of nature, plants and rocks and animals, colors and cardinal directions and numbers and sex distinctions, the dead and the living, all have a cooperative share in the maintenance of the universal order”, Lee observes. “Eventually, the effort of each individual, human or not, goes into this huge whole. And here, too, it is every aspect of a person which counts. The entire being of the Hopi individual affects the balance of nature; and as each individual develops his inner potential, so he enhances his participation, so does the entire universe become invigorated”.

It is not difficult to see that this harmonized view of nature
follows from the harmonized relations within the early human community. Just as medieval theology structured the Christian heaven on feudal lines, so people of all ages have projected their social structure onto the natural world. To the Algonkians of the North American forests, the beaver lived in clans and lodges of their own, wisely cooperating to promote the well-being of the community. Animals, too, had their "magic", their totem ancestors, and were invigorated by the Manitou, whose spirit nourished the entire cosmos. Accordingly, animals had to be conciliated or else they might refuse to provide humans with skins and meat. The cooperative spirit that formed a precondition for the survival of the organic community thus entered completely into the outlook of preliterate people toward nature and the interplay between the natural world and the social.

The break-up of these unified organic communities, based on a sexual division of labor and kinship ties, into hierarchical and finally class societies gradually subverted the unity of society with the natural world. The division of clans and tribes into gerontocracies in which the old began to dominate the young; the emergence of the patriarchal family in which women were brought into universal subjugation to men; still further, the crystallization of hierarchies based on social status into economic classes based on systematic material exploitation; the emergence of the city, followed by the increasing supremacy of town over country and territorial over kinship ties; and finally, the emergence of the state, of a professional military, bureaucratic, and political apparatus exercising coercive supremacy over the remaining vestiges of community life—all of these divisions and contradictions that eventually fragmented and pulverized the archaic world yielded a resocialization of the human experimental apparatus along hierarchical lines. This resocialization served not only to divide the community internally, but brought dominated classes into complicity with their own domination, women into complicity with their own servitude. Indeed, the very psyche of the individual was divided against itself by establishing the supremacy of mind over body, of hierarchical rationality over sensuous experience. To the degree that the human subject became the object of social and finally self-manipulation according to hierarchical norms, so nature became objectified, despiritized, and reduced to a metaphysical entity in many respects no less contrived conceptually by a physico-mechanical notion of external reality than the animistic notions that prevailed in archaic society. Time does not permit me to deal in any detail with the erosion of archaic humanity's relationship with the natural world. I have tried to
examine this dialectic in a forthcoming work, *The Ecology of Freedom*, to be published next year by Knopf and Vintage. But perhaps a few observations are appropriate. The heritage of the past enters cumulatively into the present as lurking problems which our own era has never resolved. I refer not only to the trammels of bourgeois society, which bind us with compelling immediacy, but also those formed by millenia of hierarchical society that bind the family in patriarchy, age groups in gerontocracies, and the psyche in the contorted postures of renunciation and self-abasement.

Even before the emergence of bourgeois society, Hellenistic rationalism validates the status of women as virtual chattels and Hebrew morality places in Abraham’s hands the power to kill Isaac. The reduction of humans to objects, whether as slaves, woman, or children, finds its precise parallel in Noah’s power to name the beasts and dominate them, to place the world of life in the servitude of man. Thus from the two mainstreams of western civilization, Hellenism and Judaism, the Promethean powers of the male are collected into an ideology of repressive rationality and hierarchical morality. Woman “became the embodiment of the biological function, the image of nature”, observe Horkheimer and Adorno, “the subjugation of which constituted that civilization’s title to fame. For millenia men dreamed of acquiring absolute mastery over nature, of converting the cosmos into one immense hunting-ground. It was to this that the idea of man was geared in a male-dominated society. This was the significance of reason, his proudest boast. Woman was weaker and smaller. Between her and man there was a difference she could not bridge — a difference imposed by nature, the most humiliating that can exist in a male-dominated society. Where the mastery of nature is the true goal, biological inferiority remains a glaring stigma, the weakness imprinted by nature as a key stimulus to aggression”. It is not accidental that Horkheimer and Adorno group these remarks under the title of “Man and Animals”, for they provide a basic insight not only into man’s relationship with woman, but man’s relationship in hierarchical society with the natural world as a whole.

The notion of justice, as distinguished from the ideal of freedom, collects all of these values into a rule of equivalence that denies the entire content of archaic equality. In organic society, all human beings have a right to the means of life, irrespective of what they contribute to the social fund of labor. Paul Radin calls this the rule of the “irreducible minimum”. Archaic equality, here, recognizes the fact of inequality — the dependence of the weak upon the strong, of the infirm upon the healthy, of the young and old upon the
mature. True freedom, in effect, is an equality of unequals that does not deny the right to life of those whose powers are failing or less developed than others. Ironically, in this materially undeveloped economy, humanity acknowledges the right of all to the scarce means of life even more emphatically — and in the spirit of tribal mutualism that makes all kin responsible for each other, more generously — than in a materially developing economy that yields growing surpluses and a concomittant scramble for privileges.

But this true freedom of an equality of unequals is degraded on its own terms. As material surpluses increase, they create the very social classes that glean from the labor of the many the privileges of the few. The gift which once symbolized an alliance between men akin to the blood tie is slowly turned into a means of barter and finally into a commodity, the germ of the modern bourgeois bargain. Justice emerges from the corpse of freedom to guard the exchange relationship — whether of goods or morality — as the exact principle of equality in all things. Now the weak are “equal” to the strong, the poor to the wealthy, the firm to the healthy in all ways but their weakness, poverty, and infirmity. In essence, justice replaces freedom’s norm of an equality of unequals with an inequality of equals. As Horkheimer and Adorno observe: “Before, the fetishes were subject to the law of equivalence. Now equivalence itself has become a fetish. The blindfold over Justitia’s eyes does not only mean that there should be no assault upon justice, but that justice does not originate in freedom”.

Bourgeois society merely brings the rule of equivalence to its logical and historic extreme. All men are equal as buyers and sellers — all are sovereign egos on the free market place. The corporate ties that once united humanity into bands, clans, tribes, the fraternity of the polis, and the vocational community of the guild, are totally dissolved. Monadic man replaces collective man; the exchange relationship replaces the kinship, fraternal, or vocational ties of the past. What unites humanity in the bourgeois market place is competition : the universal antagonism of each against all. Graduated to the level of competing capitals, of grasping and warring bourgeois enterprises, the market place dictates the ruthless maxim : “Grow or die” — he who does not expand his capital and devour his competitor will be devoured. In this constellation of ever-regressive asocial relationships, where even personality itself is reduced to an exchangeable object, society is ruled by production for the sake of production. Equivalence asserts itself as exchange value; through the mediation of money, every artistic work, indeed every moral qualm, is degraded to an exchangeable quantum. Gold or its paper symbol
makes it possible to exchange the most treasured cathedral for so many match sticks. The manufacturer of shoe laces can transmute his wares into a Rembrandt painting, beggaring the talents of the most powerful alchemist.

In this quantitative domain of equivalences, where society is ruled by production for the sake of production and growth is the only antidote to death, the natural world is reduced to natural resources — the domain of wanton exploitation \textit{par excellence}. Capitalism not only validates precapitalist notions of the domination of nature by man; it turns the plunder of nature into society's law of life. To quibble with this kind of system about its values, to try to frighten it with visions about the consequences of growth is to quarrel with its very metabolism. One might more easily persuade a green plant to desist from photosynthesis than to ask the bourgeois economy to desist from capital accumulation. There is no one to talk to. Accumulation is determined not by the good or bad intentions of the individual bourgeois, but by the commodity relationship itself, by what Marx so aptly called the cellular unit of the bourgeois economy. It is not the perversity of the bourgeois that creates production for the sake of production, but the very market nexus over which he presides and to which he succumbs. To appeal to his human interests over his economic ones is to ignore the brute fact that his very authority is a function of his material being. He can only deny his economic interests by denying his own social reality, indeed, by denying that very authority which victimizes his humanity. It requires a grotesque self-deception, or worse, an act of ideological social deception, to foster the belief that this society can undo its very law of life in response to ethical arguments or intellectual persuasion.

Yet the even harsher fact must be faced that this system has to be undone and replaced by a society that will restore the balance between human society and nature — an ecological society that must first begin by removing the blindfold from Justitia's eyes and replacing the inequality of equals by the equality of unequals. In other writings, I have called such an ecological society anarcho-communism; in my forthcoming book it is described as "ecotopia". You are welcome to call it what you will. But my remarks up to now will mean nothing if we fail to recognize that the attempt to dominate nature stems from the domination of human by human; that to harmonize our relationship with the natural world presupposes the harmonization of the social world. Beyond the bare bones of a scientific discipline, natural ecology will have no meaning for us if we do not develop a social ecology that will be relevant to
our time.

The alternatives we face in a society ruled by production for the sake of production are very stark indeed. More so than any society in the past, modern capitalism has brought the development of technical forces to their highest point, to a point, in fact, where we could finally eliminate toil as the basic condition of life for the great majority of humanity and abolish the ages-old curse of material scarcity and insecurity as the underlying feature of society. We live today on the threshold of a post-scarcity society in which the equality of unequals need no longer be the primordial rule of a small group of collective kin, but the universal condition of humanity as a whole, of the individual whose social affiliations are determined by free choice and personal affinities rather than the archaic blood oath. The Promethean personality, the patriarchal family, private property, repressive reason, the territorial city, and the state have done their historic work in ruthlessly mobilizing the labor of humanity, developing the productive forces, and transforming the world. Today, they are totally irrational as institutions and modes of consciousness — the so-called "necessary evils" in Bakunin’s words that have turned into absolute evils. The ecological crisis of our time is testimony to the fact that the means of production developed by hierarchical society and particularly by capitalism have become too powerful to exist as means of domination.

On the other hand, if the present society persists indefinitely to do its work, the ecological problems we face are even more formidable than those which we gather under the rubric of "pollution". A society based on production for the sake of production is inherently anti-ecological and its consequences are a devoured natural world, one whose organic complexity has been degraded by technology into the inorganic stuff that flows from the end of the assembly line; literally, the simple matter that formed the metaphysical presuppositions of classical physics. As the cities continue to grow cancerously over the land, as complex materials are turned into simple materials, as diversity disappears in the maw of a synthetic environment composed of glass, bricks, mortar, metals, and machines, the complex food chains on which we depend for the health of our soil, for the integrity of our oceans and atmosphere, and for the physiological viability of our beings will become ever more simple. Literally, the system in its endless devouring of nature will reduce the entire biosphere to the fragile simplicity of our desert and arctic biomes. We will be reversing the process of organic evolution which has differentiated flora and fauna into increasingly complex forms and relationships, thereby creating a simpler and less
stable world of life. The consequences of this appalling regression are predictable enough in the long run — the biosphere will become so fragile that it will eventually collapse from the standpoint of human survival needs and remove the organic preconditions for human life. That this will eventuate from a society based on production for the sake of production is, in my view, merely a matter of time, although when it will occur is impossible to predict.

We must create an ecological society — not merely because such a society is desirable but because it is direly necessary. We must begin to live in order to survive. Such a society involves a fundamental reversal of all the trends that mark the historic development of capitalist technology and bourgeois society — the minute specialization of machines and labor, the concentration of resources and people in gigantic industrial enterprises and urban entities, the statification and bureaucratization of life, the divorce of town from country, the objectification of nature and human beings. In my view, this sweeping reversal means that we must begin to decentralize our cities and establish entirely new ecocommunities that are artistically molded to the ecosystems in which they are located. I am arguing, here, that decentralization means not the wanton scattering of population over the countryside in small isolated households or countercultural communes, vital as the latter may be, but rather that we must retain the urban tradition in the Hellenic meaning of the term, as a city which is comprehensible and manageable to those who inhabit it, a new polis if you will scaled to human dimension which, in Aristotle’s famous dictum, can be comprehended by everyone in a single view.

Such an ecocommunity, I will argue, would heal the split between town and country, indeed, between mind and body by fusing intellectual with physical work, industry with agriculture in a rotation or diversification of vocational tasks. An ecocommunity would be supported by a new kind of technology — or ecotechnology — one composed of flexible, versatile machinery whose productive applications would emphasize durability and quality, not built-in obsolescence, and insensate quantitative output of shoddy goods, and a rapid circulation of expendable commodities. Let me emphasize, here, that I am not advocating that we abandon technology and return to paleolithic food-gathering. Quite to the contrary, I insist that our existing technology is not sophisticated enough by comparison with the smaller-scaled, more versatile ecotechnology that could be developed and to a large extent is already available in pilot form or on drawing boards. Such an ecotechnology would use the inexhaustible energy capacities of
nature — the sun and wind, the tides and waterways, the temperature differentials of the earth and the abundance of hydrogen around us as fuels — to provide the ecocommunity with non-polluting materials or wastes that could be easily recycled. Indeed, decentralization would make it possible to avoid the concentrated solid waste problems created by our giant cities, wastes which can only be burned or dumped in massive quantities into our seas.

I would hope that ecocommunities and ecotechnologies, scaled to human dimensions, would open a new era in face-to-face relationships and direct democracy, providing the free time that would make it possible in Hellenic fashion for people to manage the affairs of society without the mediation of bureaucracies and professional political functionaries. The splits opened by hierarchical society ages ago would now be healed and transcended. The antagonistic division between sexes and age-groups, town and country, administration and community, mind and body would be reconciled and harmonized in a more humanistic and ecological synthesis. Out of this transcendence would emerge a new relationship between humanity and the natural world in which society itself would be conceived as an ecosystem based on unity in diversity, spontaneity, and non-hierarchical relationships. Once again we would seek to achieve in our own minds the respiritization of the natural world — not, to be sure, by abjectly returning to the myths of the archaic era, but by seeing in human consciousness a natural world rendered self-conscious and self-active, informed by a non-repressive rationality that seeks to foster the diversity and complexity of life. Out of this non-Promethean orientation would emerge a new sensibility, one what would yield in Marx’s words the humanization of nature and the naturalization of humanity.

In counterposing environmentalism to ecology, I am not saying that we should desist from opposing the construction of nuclear power plant or highways and sit back passively to await the coming of an ecological millenium. On the contrary, the existing ground must be held on to fervently, everywhere along the way, to rescue what we still have so that we can reconstitute society on the least polluted and least damaged environment available to us. But the stark alternatives of ecotopia or ecological devastation must be kept in the foreground and a coherent theory must always be advanced lest we offer alternatives that are as meaningless as the prevailing society’s perspectives are barbarous. We cannot tell the “Third World”, for example, not to industrialize when they are faced with harsh material denial and poverty. With a coherent theory that reaches to the fundamentals of the social problem, however, we can offer to the
developing nations those technological and community models we require for own society. Without a coherent theoretical framework, we have very little to say except for tiring platitudes, episodic struggles, and pious hopes that the public can with good reason ignore except insofar as its own narrow day-to-day interests are concerned.

I suppose I could discuss these issues endlessly. Let me conclude on a rather ruthless but honest observation. The unique freedom that could await us results ironically — or should I say, dialectically — from the fact that our choices are woefully limited. A century ago, Marx could validly argue that the alternatives to socialism are barbarism. Harsh as the worst of these alternatives may be, society could at least except to recover from them. Today the situation has become far more serious. The ecological crisis of our time has graduated society's alternatives to a more decisive level of futuristic choices. Either we will create an ecotopia based on ecological principles, or we will simply go under as a species. In my view this is not apocalyptic ranting — it is a scientific judgement that is validated daily by the very law of life of the prevailing society.