$3.95

ISSN 0832-6193

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Vol.5, No.4 Fall 88

THE TRUMPETER

Journal of Ecosophy

SUSTAINABLE DEVELOPMENT, TECHNOLOGY, SENSE OF PLACE

LightStar: P.O. Box 5853, Stn. B, Victoria, B.C. Canada V8R 6S8

PUBLISHER

LightStar Press
Victoria, B.C.
Canada

N.B. For full list of Consulting Editors-Referees, see inside of back cover.

Published quarterly, supported entirely by the Canadian Ecophilosophy Network subscribers.

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Printed in Victoria, B.C., Canada, by Albatross Printing.

Victoria, B.C Canada

Date of Issue--November 1988

Second Class Mail Registration NO. 7026.

THE TRUMPETER
Journal of Ecosophy

Volume 5 Fall 1988 Number 4

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INTRODUCTION

Alan R. Drengson, Editor

Recently, Hazel Henderson visited the University of Victoria, in British Columbia, Canada. There she led a workshop and later gave a talk. The workshop was called "Riding the Tiger of Change." It focussed on the problems of transition to sustainable community life styles, given the reality of various forces of globalization.

The title of the workshop is interesting to reflect upon, for it borrows its images from Oriental traditions. Although the tiger is an exotic to the West, the image of riding a tiger has played a prominent role in both Japanese and Chinese cultures. To us the image of a tiger conjures up the idea of an animal that is large and fierce--as it does, to be sure, for people in the East from India to Japan. Riding a tiger, in one popular saying, involves the risk of ending up inside. If change is pictured as a tiger, is it possible to stay on its back-- there to ride, rather than to be swallowed up whole and swept along by the forces of change? Riding suggests being in control of, driving, or leading the forces of change. Great skill is needed, if one is to stay on the charging, leaping, stalking, rolling, climbing tiger.

In the East the tiger is not always seen as fierce. Sometimes the tiger is pictured as a friendly, curious but not too ambitious animal. It takes what it can get and then spends its time laid back in socializing, or in sleep. In fact, tigers do sleep a great deal, and seem to enjoy just sitting and lying with heads erect, eyes partially closed, ears and noses alert. They meditatively merge into the ground. Sometimes they are playful and comical. Whether fierce or comical, the tiger in Eastern stories, is always more than just the tiger of zoology. The tiger image is a poetically rich way to refer to the larger Self that is within each of us.

There is a beautiful story in the Ch'an Buddhist tradition (the ancestor of Zen) about an old monk who sacrificed himself to feed a hungry tigress and her young. The story clearly illustrates a number of different important elements of Buddhist spiritual traditions and practice, appreciated with the precision of a martial technique. The story is both concise and yet deep. One can spend a lifetime deciphering its many meanings and different perspectives. In such stories the essence of spiritual teachings can be conveyed through a brevity that enables one to hold the entire teaching, the whole of its wisdom, within one's awareness in a single moment. This gives rise to memorable lines and a powerful story. The crystallization of a practice in such stories tells one that there are mature teachers who have long practiced

ISSN 0832-6193

the spiritual discipline. Such practice brings freedom and also liberation from those things that grieve, anger and titillate us as addictions to unwhole states of mind, giving rise to compensatory strivings that restlessly want to go home. And so it is with change as experienced in the modern world. That which is referred to as the tiger in our midst is unprecedented change (driven by technological forces) that is not our intended destiny. This is one of the reasons we find it disquieting, and why we resist, and are uncertain.

In facing a tiger one cannot be hesitant or preoccupied with anxiety. Being calm and highly alert is a more apt approach, especially when coupled with respect and affection for the tigers in our lives. Just as the tiger awakens the deer, so too our current situation is one which can awaken us to the whole of our lives, which is one of our main tasks as humans. We are born unfinished, but with great potential. However, in modern conditions it is hard to realize that our lives are incomplete, not only because we are not empowered and liberated, but because there are so many distractions, and also because we lack consistent practices which will enable us to reintegrate, authenticate, and validate ourselves in cooperation with others, which is part of the meaning of community. Human communities tend to work best, when they have within them fully visible embodiments of their own best values, i.e. fully mature humans. This only happens consistently, when there are community practices, which in our large urban areas would have to work through the level of smaller, more diverse groups.

In the course of the workshop about the tiger of change, it became clear that it is difficult to keep the whole of our situation before us, in terms of our problems as a civilization, a nation, a person, or a species. Yet we must do this, if we are to understand what needs to be done. Having understood it in terms of deep ecological principles, relationships and processes, we will see what sorts of practices and activities are most conducive to ecosophy, i.e. ecological harmony and wisdom.

It is now becoming more widely realized that we are facing some of the most difficult problems the human species has ever faced. And the threats to our existence are the result of our own creative and habitual actions, magnified by the power of modern technology. The destruction of our planet for desires, instead of the creation of sustainable practices that are wholesome, also involves the consumption of our own essence. The hunger of our technological striving, coupled with our debt driven diseconomies of resource consumption and waste production, reflects a hunger in the human spirit. To live so unaware and wastefully, so possessively consumed by greed and unfilled needs, is to be lacking the freedom to alter the forces of change that are leading us to destruction. These are times which call upon us to transform our lives from consumptive to sustainable practices, ones that are restorative, healing, and nonharmful for all beings of the Earth.

A central element in Arne Naess's formulation of a deeply ecological philosophy of life is ecosophy. Ecosophy emerges when we have a total view of all of the various ecological dimensions to our lives. It involves a realization that one's ego-self is actually but a small part of a much larger Self, and this ecological Self extends as far as we can explore its relationships. The extent of this distance depends on our level of maturity. When we deeply look into the ecology of our lives in this way, we can appreciate that the deep ecology way is one committed to compassionate understanding and nonviolent action. It has nothing to do with promoting violence and hatred of human beings.

Note that here we are talking of philosophy, and deep ecological philosophers say that they follow a deep ecology way. Deep ecology is practiced (in part) by means of a deepening inquiry into the ground of our existence and the nature of self, who we are, and what our relationships are, how, finally, we connect with Nature. There is nothing very mysterious, obscure or esoteric about this. It happens to be an approach that lies at the heart of Western philosophical traditions, insofar as they are part of the living tradition of authentic philosophizing which issues from Socrates, who was one of its first Western teachers. Socrates sought not doctrine, but the realization of authentic, virtuous action. Wisdom (or ecosophy), then, is not just a theory. It involves an active understanding coming out of a self-knowledge that sees life and death together as a whole. The unexamined life is not worth living, precisely because it is one unaware of its own ignorance about its own self nature. Desiring the good, we often pursue the bad, for we suffer illusions about what we need, and what is good. But to awaken from these illusions is not easy. If we have buried our angers and fears, the prospect of awakening will be threatening, and this threat may be projected outward, to be seen as external dangers.

Socrates did not disdain understanding the world, but rather taught that we cannot understand it without understanding our selves. Only then can we appreciate the difference between real threats and projections. Such an understanding is not the product of introspection alone, but comes partly on its own, for it is already within our deeper ecological Self. We catch a glimpse of the tiger in the trees, and we try to run away. We thought we were fleeing a tiger. Then perhaps we saw the tiger more clearly; we made friends and walked with the tiger side by side; then we rode the tiger; next the tiger was inside us; then there was no tiger and we were not there, there was simply the night and the stars, the dark mountains in the distance; then there we were once more with the tiger as friend.

With this issue we begin a series of focuses on philosophy of technology and sustainable ways of life. We also continue to focus on the concept and sensibilities of place. "Sustainable development," as Norm Jacob points out, is not an easy conjunction to swallow because it seems to suggest connecting limitless growth with sustainability, which we know is impossible. The problematic word here, then, is "development." What is it that we mean by "development" and "progress"? We now see processes and changes going on that are connected with our traditional conceptions of progress that threaten our survival. How are we going to control these processes of change, and redirect them to more constructive, regenerative, and restorative ways? As with the tiger, we must first see them, and then befriend them, i.e. accept them for what they are, then we can ride them, be one with them, and yet guide them where we need to go. This process and activity of blending, redirecting, and guiding is a complex and subtle one. We must perceive its plausibility and see that it is possible for us to make a difference. We can then create self-sustaining practices, which involve continuous development in learning how to love, understand, reconcile, restore and heal. Continuing to educate our selves, while bringing out the best in others by being the best we can be (non-competitively) is a deep ecological practice, which is also sustainable development. And it gives rise to new forms of community and innovation that can redirect technological change.

Socrates tried to show that each human has the power to realize wisdom in their lives, and this does not require that they know everything, but rather that they appreciate the radical nature of their ignorance, given the world's unpredictable, open- ended, and creative nature (which we share). If we give our fullest attention, we can see in each situation how to act appropriately so as to realize authentic virtue. This, he said, is wisdom, and it is its own reward. As ecosophy it enables us to live in sustainable, harmonious ways. This, as Heidegger might have said, is realizing our own essence, which reveals itself, when we let things be through meditative non-manipulation. In this and future issues we will investigate the deep ecology of sustainable ways of life characterized by appropriate technology practices. We seek ways to transform the tiger of change into the tiger of ecological wisdom.

SUSTAINABLE DEVELOPMENT: A VIEW OF LIMITLESS GROWTH?

Norman Jacob

Sustainable development is being popularized by international organizations such as the World Commission on Environment and Development, most notably by the April '87 Brundtland report **Our Common Future**. Business leaders such as Maurice Strong and Jim MacNeill, themselves WCED Commissioners, are supporting this sustainable development. Canadian politicians favor some form of sustainable development as illustrated by the provincial premiers' endorsement of the September '87 **Report of the National Task Force on Environment and Economy**. The concept is being adopted by non-governmental organizations which work in undeveloped regions of the world. This major recognition of environmental and social problems associated with economic development would seem to be good news for those of us who have a long standing interest in these concerns.

The question of whether or not environmentalists and advocates of popular social change should support sustainable development underlies much of what I am about to discuss here. However, other questions need to be addressed first. I hope to ask more deeply than the discourse on sustainability has offered thus far "what development is sustainable?" and "what development ought to be sustained?" I am reasonably informed about the multiple problems that the Brundtland Commission attempts to address and therefore should be able to understand their sustainable development, but I don't. I do not understand how development or growth can be sustainable - it never has been.

Sustainable development supposedly addresses some of the concerns of popular movements but is relatively uncritical of the deeper structural flaws of existing world economies. The WCED recognizes that our society is destroying the resource base upon which present and future generations depend. On the other hand the Commission is reticent to confront the root problem. Our growth dependent economics prevent us from rebuilding the source of our sustenance. The accumulation in Canada of "not satisfactorily restocked" forest lands illustrates this point quite clearly. Not only do we not catch up to the necessary restocking, restoring and rebuilding but we fall ever farther behind.

"Sustainable development," rather than becoming a substantial concept upon which regeneration and redevelopment could begin, is adapted to a marketing purpose. The concept must sell government and business on conservation and renewal while it sells the citizenry of this planet on further exploitative technological development. The WCED having been unable to come to terms with the dilemma of growth dependent economics seeks to market "sustainable" development in a palatable form but one that is ultimately unsustaining.

"Sustainable development" is a new approach to old-style traditional growth, a repackaging of the same old myth of a supposedly possible "Limitless Growth" (the headline of a feature story on sustainable development by Michael Keating in the 16 January '88 **Globe and Mail**). A decade earlier, for example at the Couchiching Conference of 1978 (organized by the Canadian Institute on Public Affairs), people were trying to figure out how to sustain "Growth in a Conserving Society" (the name of that conference). WCED Commissioner Maurice Strong was then saying that a "conserving society is the only one in which real growth can be sustained." Now it is "sustainable development" which is to sustain growth, an approach equally uncritical of major world economies which can not not quantitatively grow.

The notion of a "sustained yield" in resource management is another concept deserving of our attention. Environmentalists and advocates of popular social change should be concerned that the same conceptual confusion which aided, for example, the selling of a "sustained yield" of timber (which for Canada remains unattained) would promote the newer concept of "sustainable development." This newer "sustained" sounds good as did sustained yield but the older forestry concept (a dubious theory to begin with) became a deliberate program of forest liquidation (allegedly necessary for sustained yield to actually begin). Sustained yield became a prop for the nonrenewable mining of old growth timber. As quantities of quality wood diminished other marketing concepts such as "fibre" had to be introduced to mask the nonavailability of just plain old wood. The fact is that timber production only ever was sustained by diminishing the soil and land that produced it - the land stolen or taken from sustainable cultures indigenous to that land.

Underlying the marketing of sustained yield and necessary to development were mystifications such as the "normal" forest of traditional forestry and the "perfect market" of modern forest economics, an argument I present in **Towards a Sustainable Forestry** (1987). There I argue that both forestry and forest economics are basically adaptations of 17th and 18th century mechanistic philosophy. The model/myth of nature as machine, a world which is predictable and controllable, is essential to the dominant sciences and technologies as they evolved. The roots

of the mechanistic philosophy may be traced to technological-cultural developments of the middle ages, the sources of monistic religion in Judaism and Christianity and the emergence of patriarchy before Mesopotamian civilization.

The magical "hidden hand" of classical economic theory which also derives from the above philosophy was ideologically useful as it gave a rising entrepreneurial class the moralistic justification required to exploit working people and the environment. The mutually beneficial relations which grew between developing capitalism, Calvinist Protestantism and Darwinian evolution furthered this historical development.

The final reduction of nature to human utility that we face in the late 20th century, which a crude technological rationality tells us is necessary, is an outcome of the above philosophy. The Cartesian dualism which dictates to us the direction of science and technology is fundamentally at odds with life. The world we observe and feel is not a wound-up clock, it is not a factory, nor is it a computer facility. Our adherence to the clock-factory-computer view has effected a set of relations with nature and within human culture so destructive that now human survival is threatened.

The radical separation of "self" from "other" which defines humankind's relation to nature must be addressed in our tackling of present sustainability issues. The incredible loss of genetic and ecological information now comes to the forefront of sutainability discussion. In addition, the equally severe loss of cultural forms, of traditionally sustainable culture, becomes of paramount concern.

"Sustainable development," it appears, will remake (or remarket) the potentially meaningful concepts "sustainability" and "development." Should sustainable development become a "limitless growth," as recent pronouncements would indicate, then actual sustainability would seem to be in question. If "sustainable development is simply applying those [business] criteria to include the entire resource base, the planet," as Maurice Strong defines the term (in Keating's Globe article), then my comparison of "sustainable development" with the older "sustained yield" and with the previous "growth in a conserving society" concept seems entirely appropriate. Mr. Strong's suggestion is only another indication of our unwillingness to grapple with the unsustainability of growth dependent economies, such as that of the U.S., the Soviet Union or Japan, which can not not quantitatively grow. The role of environmentalists and advocates of popular social change should be to bring these deeper concerns to the surface.

Why we hold so tenaciously to the goal of perpetual growth eludes rational explanation. There is no historical justification for such a belief. In the two major streams of human development, the "civilized" and the "primitive" or, alternatively, statist society and tribal society, it is only the latter, in those societies which have stopped growing, that a measure of sustainability is attained at all. Dynamic or evolving cultures such as our own do not sustain themselves but rather are sustained through the exploitation of other peoples and other lands. The developers and conquerors of the "primitive" have consistently risen and then fallen as the ruin of each passing civilization records.

At this time in history we find ourselves engaged in a sort of "management spiral" in which cultural and biological information is intentionally destroyed so that it may be replaced by allegedly "improved" and controllable technological forms - the same escalating spiral of aggression which has led other self-declared "progressive" cultures to their destruction. The desirability of genetic advances which have given us our improved productivity are seriously questioned by this alternative view of sustainability. The qualitative distinction between biological, cultural and technical forms of information allows us to ask for how long the alleged improvements are more productive. The nonsustainability of many technological practices in which one type of information is sought to be replaced by another should receive much further attention.

The kind of constancy found in tribal society may no longer be an alternative given our technological development and levels of population but neither is "sustainable development" as commonly proposed. Sustainable development is something which no society has ever achieved, a fact which the Brundtland report clearly ignores.

I have thus far addressed the practical limits of sustainable development but sustainability may be unattainable in principle. In addition to those things we now do not know (in practice unpredictable) there are other things we can not know (in principle unpredictable). Something like novelty or surprise is certainly the source of this unpredictable element, the source of a permanent emergence. We can not know exactly what the future will bring but we may anticipate a continuation of evolution. "What is sustainable?" is a big question and one which proponents of this goal leave entirely unanswered.

Certainty, or a singular future course, has been ruled out by the necessity of change. It is unlikely, therefore, that present conceptual difficulties surrounding the concept of sustainable development will be resolved. A process view suggests that temporary sustainability (metastability) punctuated by frequent and sudden upheavals (bifurcations) is the norm. The eternal truth, the ultimate reality, consists in change - not constancy - and many possibilities - not the one certainty.

Paradoxically the concept of sustainable development has as much to do with not developing, or letting die, as building up that which could become. Advocates of sustainable development are mute on this point in particular. The WCED does not acknowledge that for sustainable ways to emerge space now consumed by nonsustainable forms is required. What sustainable development needs more than anything else is the active creation of possibility. Michael Keating in the above Globe and Mail feature states that many inefficient and polluting factories will need to close down but I think something more fundamental is required than the further marginalizing of the already marginalized. Support for many dominant institutions, technologies and systems which are now being sustained will need to be withdrawn. Political and economic powers whose immediate interest it is to maintain these systems will need to be convinced that it is precisely their factories, reactors and armaments plants which will need to close down. To sustain new ways requires that many of these older ways not be sustained.

In the final analysis, however, we do not and can not know in advance what will be sustainable. The process view implies rather that we seek solutions in the optimization of choice and possibility. It tells us that positive prescriptions of sustainability are an impossibility. What it offers instead is the negative prescription that we anticipate and try to steer away from courses which we know to be nonsustainable. A culture based upon forced consumption and waste is inherently unsustainable.

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SUSTAINABLE DEVELOPMENT: ECONOMIC MYTHS AND ECOLOGICAL REALITIES

William E. Rees

Introduction

This paper develops one perspective on prospects for a sustainable future in Canada and the rest of the developed world. It is inspired by the recent publication of **Our Common Future**, the report of the United Nations' "World Commission on Environment and Development" (WCED 1987). The UN study has stimulated an unprecedented level of public debate on environment and development-related matters, wherever it is available, much of which focuses on the intriguingly hopeful concept of "sustainable development."

Before addressing sustainable development directly, I would like to say a few things about Western society's perceptions of "the way things are" respecting people, development, and the environment. The following reasons for doing so also provide the premises of the paper:

1. While we think we act from factual knowledge, much individual action and government policy on development and environment is based on unconscious belief, on what Stafford Beer (1981) might call our "shared illusions;"
2. This collective perception of reality is the real problem. Our culturally "shared illusions" stand in the way of sustainable development;
3. It follows that a fundamental change in society's perceptions and attitudes is a prerequisite for environmental harmony.

Let us be clear that by "perception," I am not referring to the garden variety beliefs and opinions that are amenable to change with the next edition of the National News or the **Globe and Mail**. Rather, I mean the unconscious "facts" and unquestioned assumptions out of which we more or less automatically react in the conduct of our day-to-day affairs. These culturally- transmitted perceptions shape our social relationships, our political systems, and the nature of economic enterprise. In short, I am talking about the deep-rooted beliefs and perceptions that constitute society's common philosophy and worldview. (The academically inclined may prefer the term "cultural paradigm.")

Whatever name we give it, it is this shared experience of reality that determines where we are "coming from" as a society. Since it also influences where we are going, it is worth some reflection here.

Scientistic Materialism: Shallow Soil for Sustainable Development[1]

The worldview that presently dominates is rooted in 19th century scientific materialism (Waller 1980). Building on the experimental "natural philosophy" of the previous 200 years, the late 1880's saw the deep entrenchment of scientific rationality and its companion, social utilitarianism, as the primary beacons of human progress.

Descartes had set the stage in the 17th Century with his division of reality into the separate and independent realms of mind and matter. This "Cartesian" division encouraged people to see themselves as separate and distinct from a physical reality "out there," and provided the perceptual framework for all subsequent scientific inquiry. But it was Bacon who gave modern science its **raison d'etre** by arguing that knowledge gained through science should be put to work. "From this perspective, knowledge is regarded not as an end but as a means, expressed and applied in technology, by which humans assume power over the material world" (Jones 1988, p. 236).

The resultant flowering of science and technology made possible the industrial revolution and unprecedented levels of material production. Not surprisingly, scientific method became associated with a glowing material future,[2] while traditional thinking and values were scorned as obsolete and reactionary. Indeed, science came to be equated with the only true knowledge. "Facts" that have no authority of science behind them, are written off "as having no epistemological status at all" (Jones, 1988, p. 237). The scientific worldview had succeeded in separating material knowledge from values, and asserted the primacy of the former over the later (Skolimowski 1981), p. 3).

This materialistic rational empiricism remains the dominant paradigm of Western society. To judge from economic behavior, we see the external world, the biosphere, mainly as a warehouse to be plundered in satisfaction of the material needs and wants of humankind. Certainly, too, reductionist science remains our only acceptable analytic mode. Society's prevailing ecological myth sees "the environment" in terms of isolated, individual resources or, at best, as a mechanical construction, whose component parts are bendable to human will and purpose.

Even the organization of governments reflects this analytic perspective. Environmental management is institutionally segregated into Departments of Fisheries, Forests and Land, Water, Energy and Mines, etc., with little regard to interdependent properties of the whole. Ironically, this often leaves our federal and provincial Departments of Environment with little to do!

The Assumptions of Economics

Modern economics springs from similar conceptual roots. The founders of the neoclassical school, impressed with the spectacular successes of Newtonian physics, strove to create economics as a sister science, "the mechanics of utility and self-interest" (Jevons 1879, cited in Georgescu-Roegen 1975). The

major consequences of this mechanical analogue is a traditional view of economic process as "a self-sustaining circular flow between production and consumption within a completely closed system." By this perception, "everything...turns out to be just a pendulum movement. One business "cycle" follows another... If events alter the supply and demand propensities, the economic world returns to its previous position as soon as these events fade out." In short, "complete reversibility is the general rule, just as in mechanics (Georgescu-Roegen 1975, p. 348, emphasis added).

An important corollary of this equilibrium model is that mainstream economics essentially ignores the self-evident, continuous exchange of material resources (resources and waste disposal), and the unidirectional flow of free energy, between the economic process and the biophysical environment.[3]

A second corollary of equilibrium theory is that continuous growth becomes theoretically possible (see Simon and Kahn 1984). Indeed, latter day economists seem to believe "not only in the possibility of continuous material growth, but in its axiomatic necessity" (Georgescu-Roegen 1977). This "growmania" (Mishan 1967) "has given rise to an immense literature in which exponential growth is taken as the normal state of affairs" (Georgescu-Roegen 1977). Meanwhile, any damage to environmental processes caused by this explosive human activity is assumed to be inconsequential or reversible.

That growth is entrenched as **the** measure of progress is evident from a glance at the business pages of any daily newspaper. The annual percept increase in gross national product (GNP) is still taken as every nation's primary indicator of national health. Rates of under 3% are considered sluggish, and most politicians and economic planners do not feel at ease until real growth in GNP tops 4% per annum. While such rates may seem modest, even a 4% increase implies a doubling of economic activity in a mere 17 years!

With its fixation on growth, the new conservatism[4] of such countries as the US, Britain, and Canada increasingly demands that people accept the rigorous discipline of the marketplace as the primary wellspring of values and social well-being.[5] Meanwhile, businessmen and technocrats have become the heroes of the new age and prominent role models for youth. The competitive ethic provides the accepted standard for individual self worth, with success measured in terms of conspicuous consumption and the accumulation of personal property. In some circles it is fashionable to be both socially unconcerned and aggressively oblivious to environmental destruction. While individual rights are loudly proclaimed, there is telling silence over matters of social responsibility.

It is noteworthy in this context, that capitalist states depend on the increasing size of the national economic pie to ensure that the poor receive enough of the national wealth to survive. Indeed, it is not exaggerating to say that economic growth is the major instrument of social policy. by sustaining hope for improvement, it relieves the pressure for policies aimed at more equitable distribution of wealth.

The Ecological Reality

There are two ecological problems with common economic expectations. First, the expanding economic system is inextricably linked to the biosphere. Every economy draws on the physical environment for non-renewable resources and on ecosystems for renewable resources, and **all** the products of economic activity (i.e., both the waste products of the manufacturing process and the final consumer goods) are eventually discharged back into the biosphere as waste.

The ultimate regulator of this activity, and one that modern economic theory essentially ignores, the second law of thermodynamics (the entrophy law): **In any closed isolated system, available energy and matter are continuously and irrevocably degraded to the unavailable state.**[6] (See Georgescu-Roegen 1975, 1977.) The effect of this law is to declare that all so-called economic "production" is really "consumption"!

Since modern economies are partially dependent on stocks of non-renewable material and energy resources, the Second Law declares that they necessarily consume and degrade the very resources which sustains them. The substitution of one depleting resource for another can only be a stopgap on the road to scarcity. Even resource recyling has a net negative impact on remaining stocks of available energy and material. In short, much economic activity contributes to a constant increase in global net entropy (disorder), through the continuous dissipation of free energy and matter. Contrary to the assumptions of neoclassical theory, there is no equilibrium of any sort in the material relationship between industrial economies and the environment.

This means that the growth of many national economies (e.g., Japan, the US) can be sustained only by continuous resource imports from elsewhere, and only in the short run. The global economy, for all practical purposes, is a closed system, a reality that is little affected by shuffling resources around (world trade). Thus, contrary to the implicit assumptions of neo- classical economics, **sustainable development based on prevailing patterns of consumptive resource use is not even theoretically conceivable.**[7]

The second ecological difficulty with the growth-dependent economy stems from the functional dynamics of ecosystems themselves. Ecosystems, like economic systems, depend on fixed stocks of material resources. However, the material resources of ecosystems are constantly being transformed and recycled throughout the system via food-webs at the local level, and biogeochemical cycles on a global scale. In addition, evolution and succession in Nature tend toward greater order and resilience.

The material cycles and developmental trends of ecosystems thus appear at first glance to defy the thermodynamic law. **Ecosystems seem to be inherently self-sustaining and self-organizing, and therefore to contribute to a reduction in global net entrophy.** This is possible only because ecosystems, unlike economic systems, are driven by an **external** source of free energy, the sun. Through photosynthesis, the steady stream of solar energy sustains essentially all biological activity and makes possible the diversity of life on Earth.

Material recycling, the self-renewing property of ecosystems, is therefore the source of all renewable resources used by the human economy. Moreover, since the flow of solar radiation is constant, steady, and reliable, **resource production from the ecological sector is potentially sustainable over any time scale relevant to humankind.**

But only potentially. Even ecological productivity is ultimately limited, in part, by the rate of energy input (the "solar flux") itself. Ecosystems therefore do not grow indefinitely. Unlike our present economy, which expands through intrinsic positive feed-

back, ecosystems are held in "steady- state" or dynamic equilibrium, regulated by limiting factors and negative feedback.

Why is this significant? First, human beings and their economies are now a dominant component of all the world's major ecosystems. Since these economies are growing and the ecosystems within which they are embedded are not, the consumption of ecological resources everywhere threatens to exceed sustainable rates of biological production. Second, over-exploitation is exacerbated by pollution, which impairs the remaining productivity of ecosystems.[8] (Recent reports that acid rain may be reducing rates of tree growth by as much as 25% in parts of eastern Canada serve as a timely example.) In short, **modern industrial economies both directly undermine the potential for sustainable development through over-harvesting, and indirectly compromise future production through residuals discharge.** It takes no special genius to realize that such trends are unsustainable.

The point of all this is not to argue for abandonment of scientific rationality or even the growth paradigm. Science, technology, and the human ingenuity to use them, are among the key factors required for sustainable development. However, I do want to stress that our current worldview, however successful in the past, is a dangerously shallow perception of present reality. In fact, the foregoing analysis shows many of its basic assumptions to be wrong. While this was of little consequence when the scale of human activity was limited, it is at the heart of the environment-development conundrum today. Only when we admit this possibility will the development question shift from: how to promote growth, to: how to achieve sustainability.

Sustainable Development: Can We Get There From Here?

According to the World Commission on Environment and Development, **sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs**. There is nothing very threatening--or substantial here. However, **Our Common Future** goes on to define needs as the "essential needs of the world's poor, to which overriding priority should be given." It also recognized the "limitations imposed by the state of technology and social organization on the environment's ability to meet those needs" (WCED 1987, p. 43). These latter considerations raise painful questions for modern society.

To expand on the issues involved, let us define sustainable development as **any form of positive change which does not erode the ecological, social, or political systems upon which society is dependent**. Planning for sustainable development must therefore explicitly acknowledge ecological limits on the economy, and to be politically viable, have the full understanding, support, and involvement of the people affected. This in turn suggests the need for political and planning processes that are informed, open, and fair.[9]

Social equity will inevitably become a central consideration. The World Commission reported that the 26% of the world's population living in developed countries consumes 80-86% of nonrenewable resources and up to 34-53% of food products (WCED) p. 33). Emerging ecological and social constraints suggest that reducing the present gap in standards of living between the rich and poor (between and within nations) may well require that the rich reduce both present consumption and future expectations so that the poor may enjoy a fairer share of the world's resources.[10]

Ecologically and socially concerned citizens accept such notions as self-evident, but the more profound implications of sustainable development seem invisible to the mainstream worldview. For example, Canada was the first nation to respond with its own policy initiative to the work of the World Commission. The National Task Force on Environment and Economy was established in October 1986 to initiate dialogue and recommend action on environment-economy integration in Canada. Its subsequent report (CCREM 1987) is regarded by government and industry as a milestone document, but with suspicion by environmentalists and other critics.

Stepping to the right of the World Commission, the Task Force defined sustainable development as "development which ensures that the utilization of resources and the environment today does not damage prospects for their use by future generations." Its report goes on to state that at the core of the concept is the requirement "that current practices should not diminish the possibility of maintaining or improving living standards in the future." Also: "Sustainable development does not require the preservation of the current stock of natural resources or any particular mix of...assets." Nor does it place "artificial" limits on economic growth, provided that such growth is "economically and environmentally sustainable" (CCREM 1987, p. 3).[11]

This definition is self-contradictory and thus difficult to interpret rationally. First, as previously emphasized, the present generation cannot use any nonrenewable energy or material resource (e.g., oil, natural gas, phosphate ore) without eliminating the prospect for its use by future generations. Thus, the main part of the definition is simply invalid. Second, the Task Force is reluctant to admit the possibility that living standards for some may have to be reduced that others might live at all. It avoids this issue entirely. Third, and consistent with the foregoing, the Task Force clings to the growth ethic, implying that an expanding economy is the preferred, if not the only solution, to social inequity. Fourth, the Task Force disallows the possibility that the preservation of certain "mixes" of ecological resource systems may well be essential to sustainability.

In the final analysis, then, the Task Force definition of sustainable development could be used to defend practically any pattern of economic activity, including the status quo (which, one suspects, was the general idea).

To be fair, the Task Force does provide numerous recommendations for improved economic planning and environmental assessment; for demonstration projects in sustainable development; for more research into ecological problems; for better government-industry cooperation in the integration of environment and economy, etc. However, in failing to recognize its own epistomological assumptions, the Task Force was constrained from stretching beyond such commonplace adjustments.

One problem is that the Task Force report (and, to a lesser extent, **Our Common Future**) was written from within the materialist growth paradigm. This paradigm is the ecological equivalent of rose-coloured glasses. With our vision pleasantly impaired, we will always ask first that Nature continue to meet our growing demands; it is literally beyond imagining that we should seriously adapt to Nature's constraints.[12]

Now do not get me wrong. There may well be a grand idea in the Task Force that is struggling to get out. But the fact there is

a struggle is my central point. The idea we need cannot be born of the prevailing worldview; it is missing too many essential elements. If we are serious about sustainable development, we cannot get there from here, at least not directly. We have to start from a different paradigm.

TOWARD A NEW PARADIGM

I would like now to sketch some of the errant elements I believe are central to any ecologically sound approach to sustainable development. To promote understanding, I will use a metaphor drawn from the current paradigm and a model we all know, capital investment.

Environment as Capital

In the simplest case, if you have money to invest and manage it wisely, you expect your capital to grow. Indeed, the objective of this form of "development" is to accumulate capital (money, equipment, physical plant), to be better off after making your investment than before. Certainly no one sets out to deliberately loose his/her financial shirt.

Try now to conceive of various living species and ecosystems processes as forms of capital. It is easy to think of species we harvest this way, since we all know that a given stock of fish, trees, or cattle is capable of generating variable rates of return (growth and reproduction) depending on the goals and skills of management. But we are much less aware of the valuable hidden services performed by ecosystems processes mainly because they are performed so well. One example would be the inherent capacity of local ecosystems and the biosphere to absorb, neutralize, and recycle organic and nutrient wastes. These are free services that we might otherwise have to pay for, and as such can be considered as a return on our "investment" in the ecological capital doing the chore.[13]

Clearly, any human activity dependent on the consumptive use of ecological resources (forestry, fisheries, agriculture, waste disposal, urban sprawl onto agricultural land) cannot be sustain indefinitely if it consumes not only the annual production from that resource (the "interest"), but also cuts into the capital base. In this simple truth lies the essence of our environmental crisis. We have not only been living off our ecological interest but also consuming the capital, and the rate at which we are doing so is increasing year by year. This is the inevitable consequence of exponential growth. Some examples:

1. Most major world fisheries peaked far short of their potential productivity in the early 1970's, and many, including BC salmon and Atlantic cod, are in a continuing state of decline from overfishing and habitat destruction;[14]
2. Historic forestry practices in B.C. have greatly reduced the last major temperate rain-forest, and our present "economic" clearcut methods leave an ecological disaster of denuded slopes and eroded soils. Meanwhile, tropical forests, habitat to half the world's species, have been reduced by 40%, and are being cut at the rate of 10-20 million has. (1-2%) per year;
3. The prairie soils of the North American breadbasket have lost half their organic content and natural nutrients under mechanized agriculture. Soil erosion from cultivated land typically claims 22 metric tons/ha./year, about ten times the rate of soil building (see Pimental, et al. 1976, SCC. 1986);
4. Abetted by deforestation, over-grazing, and inappropriate land use, the world's deserts claim an additional 21 million ha. of previously habitable land/year;
5. Acid rain is sterilizing thousands of lakes, destroying fisheries, and threatening forest and agricultural productivity in much of the Northern hemisphere;
6. Carbon dioxide production from the burning of fossil fuels and destruction of forests has long exceeded the capacity of the oceans and terrestrial plants to absorb the excess. Atmospheric CO_2 has risen 25% in the industrial age and is expected to double from preindustrial levels in the next century, contributing significantly to the greenhouse effect and potentially disastrous global warming.

Admittedly, interpreting such trends is difficult and their ultimate significance controversial.[15] However, viewed in the same light as rising standards of living, the decline of the biosphere provides a novel perspective on the origins of our unprecedented wealth. These intersecting curves reveal that since the beginning of the steam age, we have been busily converting ecological capital into financial and material capital.

This means that much of our wealth is illusion. We have simply drawn down one account (the biosphere) to add to another (the bank). It might even be argued that we have been collectively impoverished in the process. Much potentially renewable environmental capital has been permanently converted into machinery, plant, and possessions that will eventually wear out and have to be replaced (at the cost of additional resources-- that irritating Second Law again!).[16]

To put it another way, we have long been enjoying a free ride for which we now have to ante up. Forest products and food are undervalued in the marketplace to the extent the prices we pay do not include the costs of resource maintenance. Our paychecks and corporate profits are excessive to the extent that the resource base which produced them has been run down. That new CD player and the family's second car represent capital that was not plowed back into silviculture, soils management, and waste control. In simplest terms, the "good life" for some humans has been subsidized at the expense of all other life, and ultimately of our children and their descendants.

Living on the Interest

This suggests that for the foreseeable future, sustainable development is only possible if we are willing to live on the interest of our remaining ecological endowment. Fortunately, this is still generous enough, and with careful husbanding it should be possible to restore and even build up our capital base.

Success in this endeavor will obviously require a rewrite of the prevailing environmental myth and humankind's role in the scheme of things. To begin, the new eco-paradigm must dissolve our separateness and reunite humankind with the biosphere.

Let us be clear that while better environmental management may be an essential interim step, we are not merely talking about tougher environmental regulation or improved impact assessment. History has shown that restrictive measures to control inappropriate activities are simply inadequate. This is because regulation must be imposed to protect some social value that is perceived as secondary if not inimical to the interests of the regulatee. Corporations oriented to maximizing profits do not voluntarily incur the costs of pollution control. Moreover, if the

general interests of society (or at least the politician) are more closely associated with profit than environment, regulations are not enthusiastically enforced.

True sustainable development cannot be forced. Rather, it is the natural product of a society that "comes from" a profound sense of being in, and of, the natural world. As noted at the outset, sustainable development requires a shift in fundamental social attitudes and values, a change in worldview. People must acquire in their bones a sense that violation of the biosphere is violation of self.

From this perspective, it would be psychologically and socially unconscionable for anyone to advance a development or resource management proposal whose long-term effect would be to reduce our ecological capital. Just as today, no sane person sets out purposefully to go financially bankrupt, no one would dream of launching an ecologically bankrupt scheme. On the contrary, development would be planned and implemented, without force or coercion, in ways that would maintain or increase the renewable resource base. "Return on investment" would acquire a double meaning. Both ecological and financial criteria have to be satisfied in the cost/benefit calculus.

Think for the moment how different things would be today had enhancing our ecological capital been taken for granted as the guiding principle of resource development in British Columbia for the last 100 years. Tbere would be no concerns that sawmills in the interior may run out of timber; no fight between loggers and conservationists over the last uncut valley in the southern half of the province; South Moresby would have been declared a National Park long ago; commercial and sport fishermen would not be locked in a bitter dispute over declining shares of a diminishing resource (and the costly salmon-enhancement program would not have been necessary). It might have cost more along the way, but paradoxically, we would be richer today.

To ears conditioned by the hard-nosed rhetoric of modern business and politics, this softer path to development will sound utterly ridiculous, vaguely threatening, or merely irrelevant. But remember, from within in the current paradigm, it is difficult to recognize any vision not supported by conventional values and assumptions. The orthodox mind can only deny the evidence and insist the Earth is flat.

This is a critical point. To acknowledge it is to admit the possibility of an alternative vision and future. With self- awareness, comes the realization that there is nothing fixed or sacred about our present way of being. Materialist society, its Rambo economics, and even the compulsive consumers of the "me" generation, are all creation of malleable culture, not of any physical law. **We made them up.** If they are no longer adapted to the changing reality, we can remake them ourselves, in an image that is.

While re-education will be a long and difficult process, it may have unexpected rewards. Human beings are multi-dimensional creatures, at once aggressively competitive and socially cooperative. But Western society plays up the former, while suppressing the latter; a perverted liberalism idolizes the individual, while Conservative economics deprives him/her of the community necessary to make him/her whole. The new paradigm may enable us to restore the balance in a rediscovery of self. At the least, our new consciousness should catalyze a shift in emphasis from the quantitative to the qualitative, from the material to the tangible, from growth to development, in the lives of people and communities.

The eco-paradigm is an inherently cooperative one. It springs from a felt responsibility to the whole planet and can only be expressed through socio-political effort at all levels of social organization. Although there must be leadership, no region, province, or nation can go it alone for long.

Sustainable development thus gives new meaning to McLuhan's "global village." The media that made it possible may finally have a message that makes it worthwhile. We are engaged in no less an enterprise than restoring the habitat for all of humankind, and this will require no less than total commitment and unity of purpose.

Listen for a collective sigh of relief, the arms race, which we never could afford, which consumes so much of our ecological capital,[17] can only be seen as a perverse anachronism when viewed from the eco-paradigm. Giving up on war would free no less than 6% of gross world product for the sustainable redevelopment of the planet!

Now, of course, I am really staring off to ecotopia. It simply cannot happen, right? Perhaps, but if you cannot share this vision, take a long look from where you stand and ponder the alternative.

Notes

1. Expanded from a similar section in Rees (1987).
2. By method I refer to reductionist analysis, the breaking down of an observed reality into its components, in the belief that by learning the behavior and relationships of the disconnected parts we can come to understand the whole.
3. Since the 1960's, environmental economics has developed as a minor tributary in partial response to this problem. However, the effect on macroeconomic planning has been negligible.
4. Some might argue that neo-conservativism is actually old capitalism's last gasp. Confronted by unmanageable social, economic, political, and ecological problems, society responds with characteristic bravado by trumpeting an historically comforting illusion.
5. For Canadians, the Mulroney-Reagan trade agreement is perhaps the best recent example, since it is designed explicitly to foster a market-driven North American economy.
6. They are not destroyed, but converted to low-grade or dispersed forms that cannot be used by people.
7. I recognize that in post-industrial economies, some forms of economic growth (e.g., the information and service sectors) require few material resources. However, as developing countries strive to catch up, the global emphasis is still on resource- dependent material growth.
8. Think of pollution as one manifestation of the degradation and dissipation of matter and energy associated with industrial economies. Pollution is the entropy law at work.
9. These requirements fly in the face of such currently popular conservative trends as deregulation, privatization, and uncritical worship of the market economy.
10. The alternative, bringing the third world up to first world living standards, would require an ecologically improbable five to ten-fold increase in world industrial output (WCED 1987, p. 213).
11. No one advocates "artificial" limits to growth, but surely there are circumstances in which we might need **real** ones!
12. In the words of Stafford Bear (1981): "...we cannot regulate our interaction with any aspect of reality that our model of reality does not include...because by definition we cannot be conscious of it."
13. For a discussion of this concept, see Gosselink et al., (1947), and Westman (1977).
14. This is not only a common property problem. Clark (1973) has shown that while it may be ecologically disastrous, it is economically rational and more efficient, if by so doing s/he obtains a higher return from investing the proceeds than by husbanding the resource.
15. For example, some problems such as soil erosion, may continue for decades with only minor impact on productivity (one can take $100 a year from a bank account for as many years as the balance exceeds $100), and optimists will always argue that new technology will ultimately save

the day. The point here is simply to underscore the widening gap between human consumption and the productive capacity of the biosphere.
16. There is a suggestion here that the only **real** wealth is the ecological capital we have been steadily liquidating.
17. $900 billion in 1985, or "more than the total income of the poorest half of humanity" (WCED 1987, p 297).

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SUSTAINABLE DEVELOPMENT AND THE DEEP LONG-RANGE ECOLOGY MOVEMENT

Arne Naess

I

The questions of social, political and economic development are of astounding complexity these days. I shall therefore stick as closely as I can to the issue of sustainable development from the point of view of the deep ecology movement. People supporting the deep ecology movement may have different ultimate premises of a philosophical or religious kind. But most of them have some rather general views in common. I shall use a set of tentative formulations of these views, the "deep ecology platform" which I whole-heartedly accept.[1]

The Naess/Sessions Formulation of a Deep Ecology Platform
1. The welfare and flourishing of human and nonhuman living beings has value in itself. The value of nonhuman beings is independent of their usefulness to humans.
2. Richness and diversity of living beings has value in itself.
3. Humans have no right to reduce this richness and diversity except to satisfy vital human needs.
4. The flourishing of human life and cultures is compatible with a substantial decrease of the human population. The flourishing of nonhuman life requires such a decrease.
5. Present human interference with the nonhuman world is excessive, and the situation is rapidly worsening.
6. Policies must therefore be changed. These policies affect basic economic, technological, and ideological structures. The resulting state of affairs will be deeply different from the present.
7. The appreciation of a high quality of life will supersede that of a high standard of life (as measured by economic and materialistic criteria).
8. Those who accept the foregoing points have an obligation to try to contribute directly or indirectly to the implementation of necessary changes.

II

Let me compare the eight points of the deep ecology platform with current basic views on sustainable development, starting with the requirements of human resources for living on the planet.

The exceptionally careful formulations in Chapter 1 of WCS (the **World Conservation Strategy** of 1980) will be extensively quoted. The term "development" is there defined as,

> WCS 1: ...the modification of the biosphere and the application of human...living and non-living resources to satisfy human needs and improve the quality of human life.

The close relation of this definition of "development" to the term "conservation" is made clear by the following definition of "conservation" as,

> WCS 2: ...the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations.

The term "sustainable" is not defined, but to sustain future generations of humans implies **long term** support of life support systems on Earth. This is clear from the opening sentence of the first chapter of WCS:

> WCS 3: Earth is the only place in the universe known to sustain life. Yet human activities are progressively reducing the planet's life-supporting capacity at a time when rising human numbers and consumption are making increasingly heavy demands on it.

It is difficult and for the purposes of this article, unnecessary to try to determine the exact nature of agreement, and disagreement between the intended meanings of the WCS and the Deep Ecology platform. It suffices merely to suggest tensions that may occur to many readers. [As already pointed out by the two previous papers in this focus -- editor.]

The third point of the platform places limits on the "rights of humans." Philosophers who are dubious about the notion of "rights" propose its elimination, and propose for instance, using the phrase "humans should not..." instead. But the postulation of certain human "rights" has a positive influence today and as long as the term is retained in this connection, it should also be used when referring to nonhumans.

According to the supporters of the deep ecology movement, humans have no right to reduce the habitats or life conditions of non-humans merely because of human desires or vain aspirations, or because of poor management of human affairs. Humans cannot treat the planet as if it were their private property.

The use of using the strong term "vital need" is intended to announce limits of justifiable interference by humans in the biosphere. Not every demand in the marketplace proves there is a human need. Hundreds of millions of people have unsatisfied vital needs of the most pressing kinds while at the same time hundreds of millions of others are wasting the resources of the planet and decreasing overall life conditions on earth for the most trifling and unworthy purposes.

The gigantic gross national product of the rich industrialized nations is unfortunately a measure of gigantic waste with little increase in the quality of human life as a result. It could be called the gross national pollution, GNP.

Where the limit is drawn between vital and non-vital human needs, however, is a question that must be related to local, regional, and national circumstances and cultural differences. And even then, certain areas of disagreement must be taken as normal.

III

The concern for nonhuman life **for its own sake** unfortunately is not completely absent from WCS, but it is rather subdued. Nevertheless, it should be noted that in the WCS quotation # 3 the notion of "the planet's life-supporting capacity" is used, not "the planet's human-supporting capacity." In the first chapter of WCS, "a new environmental ethics" is called for, and it may plausibly be interpreted as an ethics in which nonhuman life is considered to be preserved also for its own sake. Furthermore, the title "World Conservation Strategy" suggests something wider than conservation for the sake of humans only.

The **ultimate** exclusive concern for humans is expressed clearly by many formulations in WCS: "Conservation, like development, is for people,..." In WCS quotation # 2 the reference to future generations, taken in isolation, may be interpreted so as to cover all living beings, but that is not possible when reading the full text.

From the definition of "development" in WCS it follows that satisfaction of nonhuman needs, or the improvement of the quality of life any single nonhuman kind of being, cannot possibly be a part of development in a direct way. I shall not propose a wider concept. But, of course, "conservation" in general must refer to needs also of nonhumans. It is not "for people" only.

There is at least one possibility of making the quotation from WCS compatible with those from the deep ecological platform. It leans heavily upon the concept of maturity: comprehensively all-sided, mature human beings accept at least implicitly the two first points of the Deep Ecology platform, and they experience a strong need to reject policies incompatible with them. One may therefore say that there is a human need to protect Nature for its own sake, independently of its usefulness for **other** human ends. "Sustainable development", defined in terms of human needs, will therefore have to take into account the protection of Nature for its own sake.

The hypothesis that poor people are less eager to support protection of Nature is not tenable in general, but they certainly have less time and energy available.[2] The main obstacle is not poverty, but immaturity. If the hypothesis concerning overall maturity is accepted, then the apparent incompatibility between so-called utilitarian and "anthropocentric" orientations versus the non-utilitarian, and "ecocentric" perspectives of the ecological movement is largely or completely over-come. Incidentally, the above terms, of Latin origin, have ambiguities in use, which makes it difficult for them to function properly in debates.

IV

The expression "value in itself" of points 1 and 2 of the Deep Ecology platform is a source of debate. My interpretation of this phrase is clearest when we talk about beings that may be said to have preferences or interests. When we say "Do it for its (or his or her) own sake!", "It was done for its (his, her) own sake," or in comparable situations use the term "for its own sake" as contrasted with for the sake only of someone else only, this is a **sufficient** ground for attributing value in itself to what we speak about. I do not here intend any professional philosophic meaning to these expressions, but rather a meaning well known in everyday situations. I refrain from any professional philosophical analysis here, but speak rather as a mere supporter of the Deep Ecology movement along with thousands of others.

When a campaign with the aim of protecting a river against so-called development is launched, the slogan "Let the river live!" concerns not only the H_2O of the river, but also a somewhat vaguely conceived ecosystem. Sometimes it will include people who live along the river or use it in a generally sustainable way. Clearly this broad way of interpreting the term "life" when refer-

ring to a river is important, when forming strategies of the conservation of life's resources. It is clear that most campaigners for the protection of a river against major interference not only have narrow usefulness in mind, but feel the interference to touch or reduce the meaning of their own lives. People are trying to protect their **vital** need for meaning, and what is necessary to maintain that meaning. Development is not sustainable which must be expected to reduce that overall meaning. We are thus led to a concept of sustainable development which includes essentially the satisfaction of these vital human needs, and which also protects the planet for its own sake.

V

"What is the carrying capacity of the Earth?" This question has often been raised within a narrow frame of reference, with the following two assumptions taken for granted:
Assumption 1: Nature has no intrinsic value, so we need not protect any animals or plants other than those which clearly are useful for us. "Carrying capacity" can only mean "carrying capacity for humans."
Assumption 2: If there is a conflict between the need for space for human settlement, and space for natural parks, or for other species in need of a great deal of room then humans have priority.

Generally it has also been taken for granted, with some justification, that new technology which will make increases of human population manageable will continue to occur; for instance new "green (read: blue) revolutions," relying heavily on chemicals and a transition from small scale family agriculture to agribusiness. Today the old debate about carrying capacity seems rather odd. What is now at stake are the richness and diversity of life on this planet and the proper place of humans in Nature!

Point 4 of the Deep Ecology platform contains two rather different propositions. The history of humanity covers a vast diversity of cultures based on rather modest populations. Today destruction of cultural diversity is partly the result of too many humans on earth. Admittedly, DEP point 4 is a rather abstract view, but it furnishes an important long range, global perspective: That of a human population small enough to avoid gigantic bureaucracies, insufferable crowding, and spacious room for every activity except war.

What the first proposition of point 4 does not mention is the transition period from, let us say, 8 billion to substantially fewer people than there are today. A transition period of 1,000 years? Whatever the number and the dates, this long perspective is liberating to our minds, and is of practical importance for the long range planning of cities and areas of free Nature. Furthermore, a period with comparatively few small children should encourage us to think about how to make it possible for every adult to enjoy the life-long company and care of small children, without producing any or only one or two of their own.

My personal presentation of the abstract scenario of a stabilization-reduction-stabilization process rarely meets objections among Deep Ecology supporters, but it cannot be said to be a favorite theme! Evidently, the main practical concern today is that of stabilization. Opinion studies among women in the third world suggest that the majority among the poor do not want more children than they already have. It seems that men have (in part motivated by conceptions of virility, status or illusions about economic gain) the power to force women to bear more children than they want. It will take time for men to respect the wishes of women.

Against the second proposition of point 4 (that maintaining and, I am tempted to add, restoring, the richness and diversity of life on Earth, require a significantly smaller population than 5 billion) it may be objected that the total success of ecologically responsible policies might decrease towards zero the undesirable interference of 5 billion humans in the ecosphere. But it seems to me that this process may prove to meet as many obstacles as the reduction of the population, without resulting in a more desirable state of affairs. Centralization, gigantism, and reduction of cultural diversity, seem unavoidable features of 5 billion people on Earth.

Plans for sustainable development often neglect the population issue. This colors, for instance, the so-called Brundtland report on **Our Common Future World**. One of the reasons is clear: the subject is a touchy one. One hypothesis still seems to color the ambivalent attitude towards population reduction, e.g. that love of children necessitates big populations, and that therefore a proposal to try to reduce our numbers is a proposal to reduce love. The bad reputation of a vision of future population reduction is also due in part to onesidedness: The shallow ecology movement has been full of concern for "overpopulation" in the poor countries, but it has neglected the extreme situation in the industrial states. A good meal here may require 40 times as much energy as a first rate dinner in a third world country. Cleaning clothes and dishes requires perhaps 90 times as much energy. This means that, for instance, in Norway, which has 4 million people, the energy consumption necessary for eating is comparable to that of 160 million people in a sustainable energy economy and to that of 360 million when washing dishes and clothes. Planetary stress would be greatly reduced with 1 million fewer Norwegians than with 1 million fewer people in, say, Mexico City.

A simple conclusion: Sustainable development of populations is clearly a subject of importance in every country, but the greatest responsibility rests with the richest. Since an increase in population is expected during most of the next century, population reduction will be a necessary part of the scenario of sustainable future development.

From what has been said above, it follows that those who support the Deep Ecology movement envision deep political, social, and economic changes. (Point 6 of the platform.) But there is also a widely held view that, except for the period of transition, the quality of life will increase in spite of decreases in the material standard of living in the rich countries. (Point 7 of the platform.) This materialistic decrease is inevitable given one of the rules of universalizability: not to favor a level of material standard of living that you cannot seriously hope would be attained by the rest of humankind. (Assumption: One cannot seriously hope for catastrophes.)

VI

The introduction of life-saving medicines and life-destroying weapons, produced by the industrial countries, severely undercut the status of traditional leadership in non-industrial communities. Development tended to be conceived by the new leaders of these countries as merely an increase in industrial activity and consumption. Traditional societies were always in transition, but slowly. The tremendous rate of change caused by

the influence from dominant industrial states has severely damaged cultural identity, self-reliance and even self-respect in many areas where formerly a deep variety of vigorous self-respecting cultures thrived. There is now a growing trend however to look again to assistance of traditional medicines, traditional ways of population stabilization, and, in general, for the support of customs which still have some authority and which clearly favor sustainable development, including sustainable cultural identity and a population proportional to resources.

Any general view inspired by ecology includes reverence for the richness and diversity of human cultures and subcultures. Indeed, Reverence for Life implies this as a special case. The often uncritical imitation of Western ways by third world leaders and economic elites is now hopefully on the decline. Modern cultural anthropology shows how countries of great material poverty (when compared to the industrial ones) nevertheless maintained extremely rich cultural traditions. An example: The Nepalese Sherpa village of Beding (Peding) (3,700 meters above sealevel) had only about 150 people in the 1970's. Statistics show that they were among the world's poorest people. But their monastery was beautiful and well kept by their numerous monks and nuns. Much of the work in the village had artistic or religious significance. Feasts were sometimes of overwhelming richness and might go on for a week, starting before sunrise with music performed by the monks in honor of their great mountain Tseringma (Gauri Shankar, 7,143 meters high). Faced with the question of whether they would enjoy the economic prosperity resulting from foreign expeditions to their unclimbed mountain, or whether they should save it from degrading Western behavior, all 47 families cast their votes for protection. But the central government of Nepal and the world's mountaineering associations had no sympathy for such a strange idea: "Protection of a **mountain**!!?" **The cultural needs of the community did not count.** The central government thought of "progress," and the mountaineers of "conquests."[3]

In the 1960's, a new generation of social and cultural anthropology students, and a number of other critical researchers, described nonindustrial cultures in such a way that it seemed that the rich industrial societies had as much to learn from the nonindustrial cultures, as the other way round. The increase in respect for nonindustrial cultures made itself felt about the same time as the sudden internationalization of the ecology movement with Nature as its focus. The French anthropologist Marshall Sahlins described certain stone age tribes in a way which conveyed the message that the essential quality of life could perhaps not be lower among them. Nonetheless, there were some fundamental aspects of quality of life which were at a high level, such as economic security, absence of stressful work, and lots of time for meaningful togetherness which bridged the generations.

At any rate, among the many aspects of nonindustrial cultures which captured the ecology movement's attention was their relationship to Nature. Their relations to resources were mostly such as were sustainable. One obvious reason: Moderate population and adequate distance between tribes helped determine sustainable development. The earlier view that traditional societies did not develop but were completely stagnant, has been rejected as a result of an explosive increase in knowledge about the history of nonindustrial cultures. And so sustainable development today must therefore mean development among the lines of each culture, not development along a common centralized line. But faced with the problem of hungry children, humanitarian action is a priority, whatever its relation to developmental plans and cultural invasion.

VII

A world conservation strategy implies acceptance of sustainable development. Such development is, or should be, implicit in the programs of Green parties and the visions of Green societies. The main relation between the deep ecological movement and the ideals of green societies is simple: The establishment of a green society **presupposes** the implementation of the necessary changes suggested in the platform of Deep Ecology. The platform remains, however, on a rather abstract conceptual level. If it is posited as a goal that all human societies should be green, it is pertinent to ask: "What about deep cultural and subcultural diversity?" The blueprints of Green societies have so far been the work of industrial Westerners, a rather specialized fragment of humanity. It is to be hoped, but it cannot be taken as a certainty, that development consistent with the guidelines of the deep ecology movement admits and even encourages such diversity.

From the very beginning, the international Deep Ecology movement has been nonviolent to a high degree, and general Gandhian viewpoints have been common among its supporters. The arms race, with all its grave consequences, is incompatible with a high level of sustainable development.[4] This has consequences not only for the programs of Green parties, but for all realistic, sustainable development plans.

From the point of view of the Deep Ecology movement the widespread acceptance of the slogan "sustainable development!", over the post-war slogans of "economic growth!" and the simplistic "development!" is itself due to an awakening from an ecological slumber, and it should be greeted with joy and anticipation.

The broadness and deepness of sustainability guidelines clarifies this new important perspective. The industrial countries are now rightly expected to **see themselves as developing countries.** Their present lack of sustainability is grave and the outlook for the near future is dark. For the third world the outlook is brighter. They might avoid the onesided industrial phase and enter a green post-industrial stage on a higher level of sustainability. Long range global sustainability as a central concern may bring all societies together in more peaceful cooperation than ever before in history.

Notes

1. On the Deep Ecology movement see, e.g. Bill Devall and G. Sessions, **Deep Ecology**, Salt Lake City, 1985, and Arne Naess, "The Deep Ecology Movement: Some Philosophical Aspects," **Philosophical Inquiry**, 8, 1986, No. 1-2, pp. 10-31. This issue of **Inquiry** also contains other articles on the movement. See also back issues of **The Trumpeter**, especially Summer 1988, and Fall 1986. In what follows I refer to the short, but weighty publication **World Conservation Strategy** (WCS), prepared by IUCN in collaboration with UNEP, WWF, FAO and Unesco, obtainable from IUCN, 1196 Gland, Switzerland.

2. Gandhi's experience in his ashrams shows how his view that snakes and other "poisonous" creatures have their own dignity and a right to be unmolested was easily grasped by poor people. Examples from most cultures are easy to find. See my **Gandhi and Group Conflict**, Universitetsforlaget, Oslo, 1974.

3. See my "Modesty and the Conquest of Mountains" in **The Mountain Spirit**, ed. Michael C. Tobias and H. Drasdo, The Overlook Press, New York, 1979, pp. 13-16.
4. An ecologically inspired proposal for unilateral disarmament: A. Naess, "Consequences of an Absolute No to Nuclear War," in Avner Cohen and Steven Lee, eds., **Nuclear Weapons and the Future of Humanity**, Ottawa 1986, pp. 425-436.

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WHAT IS PHILOSOPHY OF TECHNOLOGY? AN INTRODUCTION

Patsy Hallen

> Everywhere we remain unfree and chained to technology, whether we passionately affirm or deny it. But we are delivered over to it in the worst possible way when we regard it as something neutral; for this conception of it, to which today we particularly like to do homage, makes us utterly blind to the essence of technology.
> Martin Heidegger, **The Question Concerning Technology**, p. 4

THE PHILOSOPHY OF TECHNOLOGY refers to the analysis and critique of technology, its nature, scope and meaning as well as the concepts, methodologies, epistemologies and ontologies implicit within technological practice.

Most people assume that technology is a form of applied science and hence depends on science. Science is primary, technology is secondary, this is the view which dominates in thinking about the science-technology relationship. As a result of this dominant paradigm, most philosophers ignore technology as a study in its own right and assume that what counts is an analysis of science.

But there is a growing recognition among philosophers such as Jacques Ellul, Friedrich Dessauer, Martin Heidegger, Hans Jonas, Don Ihde and others, that technology should be approached not in a piecemeal fashion as an adjunct of science, nor merely as a sociological phenomenon, but as a total structure which must be analyzed in terms of its own inherent elements.

In his essay "The Question Concerning Technology," Martin Heidegger, for instance, argues that technology is ontologically prior to science and that, contrary to what most of us assume, science is actually a tool or instrument of technology, particularly modern science. As Heidegger points out, it is claimed that modern technology is incomparably different from all earlier technologies because it is based on modern physics as an exact science. But the reverse holds true as well: "modern physics, as experimental, is dependent upon technical apparatus and upon progress in the building of apparatus" ("The Question Concerning Technology," p. 15).

Think of microparticle physics' dependence on sophisticated technical apparatus such as cloud chambers, huge magnets or mile- long accelerators. Modern science is technologically formed. Contemporary science is technologically embodied science. But modern technology does not just put science to use in the sense of getting scientists to dream of reasons for yet another ingenious device. For Heidegger, technology is the foundation of science in an ontological sense, as a way of being in the world.

In his book **Being and Praxis**, Don Ihde explores this thesis of Heidegger's. Just as a theory of action is a foundation for a theory of knowledge, so too technology founds science. As knowing is an activity, so science (knowing) grows out of technology (activity), Ihde explains. In this framework technology as a mode of being or form of life becomes the origin or "cause" of science. What gives rise to science is a specific way of being in the world, based on specific embodied forms of action.

Science then becomes the "tool" of technology. This rediscovery of the primacy of technology is a radically new feature of our age. As Heidegger points out, the Greek philosophers knew it and Plato used the word **techne** in the widest sense, as a form of knowing (**episteme**), an opening up to the world. It has taken the enormous danger of the technology of our era to alert humankind to the primacy of technology.

As Heidegger points out, familiarity tends to cover up what is most significant in our relations with the world. Technology is modern peoples' way-of-being-in-the-world. Machines are our atmosphere. We live, move and have out being in machines. I know myself through my world and as Don Ihde notes, my world is a "techniosphere." Machines are my milieu. But what is obvious is not always understood. Consider a typical day: alarm clock, toothbrush, radio, electric kettle, frige, car, typewriter, we use so many machines that we scarcely notice them **as machines**. As Heidegger points out in **Being and Time**, machines are semi-transparent. The tool withdraws because what is focal is the work. Only if the machine breaks down does it lose its transparency, become opaque, a thing.

Yet the tool, seemingly transparent, is a non-neutral transformation of what a person knows. Take Don Ihde's example of a telephone. The technology of the telephone is **not** neutral. The

telephone reduces the other to a voice and so gives us a monodimensional picture. The other person's presence is reduced to a tinny, hollow voice, non-spatially located (the other could be next door or in Holland) and not necessarily tied to the situation (as long as the voice says "yes" at appropriate intervals, the person need not be attentive, s/he could be reading her mail).

Furthermore, the telephone is geared to a specific kind of communication: it is best for information. "Do you have this book in stock?" is a question much more suited to the telephone than a lover's query. So the telephone reduces the total richness of human experience to information-getting. The essence of telephone is non-neutral. The actual tool transforms experience. Technology mediates the way we are, move, live-in and experience the world. Technology thoroughly textures our world.

The current conceptions of technology miss the very essence of technology, according to Heidegger. Most people think of technology as a means and, as such, neutral. They also see technology as a human activity. These definitions are termed by Heidegger the "instrumental" and "anthropological" definitions of technology. Heidegger admits that these definitions are correct. But he goes on to qualify this: "The merely correct is not yet the true." For these definitions, while correct, are limited and as such they miss the essence of technology.

Heidegger asks a more fundamental question: What conditions make technology possible? In answering this question, Heidegger posits that technology is a mode of truth, or a field within which instruments (the things of technology) and activities (the human subjects) take place.

What is technology's distinctive mode of truth? Heidegger responds thus: "Technology is...no mere means. Technology is a mode of revealing." And how is the world revealed technologically? It is revealed as a **standing reserve**, as a field of energy or power which can be captured and stored. "The revealing that rules in modern technology is a challenging, which puts to nature the unreasonable demand that it supply energy which can be extracted and stored as such." The world is seen as a standing-reserve. Nature is seen in a particular way, not as mother or protector, as in other cultures, but as a reserve on call for our use. "The earth now reveals itself as a coal mining district, the soil as a mineral deposit."

Heidegger argues that this particular understanding of Nature, as a standing reserve, is the very condition of modern technology. "...[E]ven the Rhine appears to be something at our command...the river is dammed up into the power plant. What the river is now, namely a water-power supplier, derives from the essence of the power station." So technology, in its turn, transforms Nature and in so doing augments our view of It.

For Heidegger this view of Nature as standing reserve is an attitude which lies behind modern science. It is for this reason, then, that he claims that modern science is the child of technology. He admits, of course, that modern technology is chronologically later than modern science. "Chronologically speaking, modern physical science begins in the seventeenth century. In contrast, machine-power technology develops only in the second half of the eighteenth century." But when Heidegger speaks of technology as the origin of science, he is not making a chronological claim, but an ontological one, and he is not speaking about machine-power technology, but about the way-of-being that gives rise to machines in the first place. Modern physics is the herald of this experience of the world as standing reserve. Nature is stockpiled; it is on call, ready to deliver. "Everywhere, everything is ordered to stand by; to be immediately at hand." Technology, as does modern physics, "entraps nature as a calculable coherence of forces." And it turns man into the one who orders Nature, challenges It and sets upon It to suit his needs. "Agriculture is more the mechanized food industry. Air is now set upon to yield nitrogen, the earth to yield ore..." And, "Man, investigating, observing, ensnares nature as an area of his own conceiving."

But here Heidegger homes in on the danger of modern technology. First Nature is seen exclusively as standing-reserve and so dominant is this view that man "comes to the point where he himself will have to be taken as standing-reserve." Don Ihde comments that this might be literally true: Humanity itself might become a standing reserve in genetic engineering. I think of Jonathan King's remarks on manufacturing humans to repair critically radioactive power plants. Heidegger then goes on to write these lines:

> Meanwhile man, precisely as the one so threatened, exalts himself to the posture of lord of the earth. In this way the impression comes to prevail that everything man encounters exists only insofar as it is his construct. This illusion gives rise in turn to one final delusion: it seems as though man everywhere and always encounters only himself. Heisenberg has with complete correctness pointed out that the real must present itself to contemporary man in this way. In truth, however, precisely nowhere does man today any longer encounter himself, i.e. his essence.

Technology has banished man in a specific way of being, as an orderer of Nature, rather than letting Nature be. And Heidegger comments, "where this ordering holds sway, it drives out every other possibility..."

Despite these indictments of technology, Heidegger is not despairing. For him technology is fundamentally ambiguous in its nature. Despite its consuming nature, it has brought the danger of swallowing all alternative modes of being to our attention. It is technology itself that demands us to think about it, about its essence. So in fact what is dangerous, says Heidegger, is not technology; what constitutes the real threat is not the potentially lethal machines and apparatus of technology.

The real threat lies in humankind and in the fact that technology has affected humans in their essence such that we are incapable of seeing Nature in any other terms, except as a reserve standing to serve us. The antidote for Heidegger lies in human's realization that it is they who are needed, not more or better technology. We must do our best to nurture this self- awareness. Heidegger says: "Here and now in little things that we may foster the saving power is in its increase. This includes holding always before our eyes the extreme danger."

Heidegger's final hope in saving humankind from the genuine monstrousness of technology lies in art. A curious choice. Heidegger offers us several reasons why he sees art as hope against the "totalizing closure," to use Don Ihde's phrase for technology. First: "Confrontation with [technology] must happen," according to Heidegger, "in a realm that is, one the one hand, akin to the essence of technology." Art is a technic and thus related to technology and to the crafts of earlier times, and hence to the best of technology. It is also speculative, as was early science and anti-practical as with later technology-dominated science. Finally, art is, unlike technology, anti-reduc-

tionist. As Ihde points out, it proliferates possibilities and as such is the "strategic counterbalance" to the narrowing down mentality of technology. For Heidegger we in the future will experience an internal need to turn to poetics in this, our technological society.

Our age has thus given rise to what is known as the philosophy of technology, the attempt to understand the nature and meaning of technology, to understand technology in relation to the central concerns of epistemology and metaphysics and to evaluate the technological society. As Don Ihde observes:

> ...[W]hat is amazing in the light of the clearly obvious impact of technological culture, is that philosophy as a whole, as a discipline which prides itself in its comprehensiveness, its critical acumen and its claim to deal with the most profound human, social and value questions, should have taken until now to develop a philosophy of technology. **Technics and Praxis**, p. 130

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THE ARROGANCE AND BANALITY OF TECHNOLOGY: A CRITIQUE FROM THE PERSPECTIVE OF DEEP ECOLOGY[1]

Hwa Yol Jung

I

We have indeed become disenchanted with the world whose dominant prose is written in the language of technology, and, with the postmodern condition of humanity which is enframed by the hegemony of technology--including the cybernation of knowledge and the computerization of society.[2] In 1982, **Time** even selected a machine as the "man of the year." We are all wired to, and became hostages of, the **network** of technology from whose "channeled existence" there is no exit in sight. Ours is the epoch when technology is totalizing, one-dimensional, planetary, and terrifyingly banal and normalizing, when the fundamental project of macro-technology threatens to create a vast necropolis for the entire Earth and bring humankind to the brink of collective extinction or what Jonathan Schell calls "the death of death,"[3] and when micro-technology claims to have invented our "second self"[4] whose "soul" may soon become, if it has not already become, imprisoned behind the invisible walls of a gigantic Panopticon.[5] In this setting, it is most appropriate to suggest that there should be **philosophy of the technological** as an encompassing area of philosophical inquiry. It is clear, moreover, that this new inquiry will become the most important form of critique in the epoch, when technologization is the rampant and sweeping norm of everything we do, think, and know, that is, when everything is technocentric and technomorphic. Indeed, our **dilemma** lies in the fact that man is **human** because he is technological in the most basic sense of the term. In other words, to put it in the language of Werner Heisenberg, technology is to humans as the shell is to the snail or as the web is to the spider. And yet, on the other hand, the very physical survival of humanity hangs in the balance because of our own artifacts. In **Civilization and Its Discontents**, Sigmund Freud expressed this dilemma both poignantly and prophetically.[6] According to him, humans invented and use technology for their physical survival against the harshness of Nature and then for the comfort of his life. Now, however, we have reached the point where technology has the potential of destroying and obliterating humanity and the world.

The year 1972 was the year of some momentous events in the ecological movement. The Club of Rome issued its first report called **The Limits to Growth** on the dismal condition of the world as is evidenced in accelerating industrialization, rapid population growth, widespread malnutrition, depletion of nonrenewable resources, and a deteriorating environment.[7] Also, in that year, a parliament of delegates from all over the world under the auspices of the United Nations held the conference in Stockholm on the human environment, which turned out, for the most part, to be a disappointing exchange of diatribes especially between the developed and developing nations on who gets what, when, and how--leaving us with nothing but the despairing sense of, as it were, repairing a torn spider's web with our fingers-- to use Ludwig Wittgenstein's metaphor. In the same year, the Norwegian philosopher Arne Naess lectured in Bucharest on the intrinsic connection between philosophy and the ecology movement in the name of "deep ecology" when he said:

> in so far as ecology movements deserve our attention, they are **ecophilosophical** rather than ecological. Ecology is a **limited** science which makes **use** of scientific methods. Philosophy is the most general forum of debate on fundamentals, descriptive as well as prescriptive, and political philosophy is one of its subsections. By an **ecosophy** I mean a philosophy of ecological harmony or equilibrium. A philosophy as a kind of **sofia** wisdom, is openly normative, it contains **both** norms, rules, postulates, value priority announcements **and** hypotheses concerning the state of affairs in our universe. Wisdom is policy wisdom, prescription, not only scientific description and prediction.[8]

Naess further noted that the influence of "deep ecology" had yet to gain momentum--but in recent years it has been gaining ground and strength. Indeed, in this light, the talk of ecological

thinking is still in its **infancy**. Martin Heidegger could very well describe the condition of ecological thinking when he quips about the poverty of our thinking in our time: there is interest in thinking today as it is engendered by many thought-provoking events; ironically, however, what is most thought-provoking in our time is that we are still not thinking.9 By thinking, Heidegger does not mean our ability to theorize abstractly but our inherent ability to make judgments as human beings based on the **sensus communis** or "common sense" (as in Socratic or Confucian wisdom and Aristotelian prudence) as the abode of man's humanity. It is thinking as a natural propensity of "examined" life which is a faculty of every man who belongs to the noble species called human. Heidegger calls thinking a "handicraft": "Every motion of the hand in every one of its works carries itself through the element of thinking, every bearing of the hand bears itself in that element. Therefore, thinking itself is man's simplest, and for that reason hardest, handiwork, if it would be accomplished at its proper time."[10] In contrast, thoughtlessness is the condition of inhumanity. In a time of ecological thoughtlessness, we need to attune ourselves to the dire necessity of thinking as a prelude to the **radical** transformation and reenchantment of our experience of the world.

For our purposes here, deep ecology may be defined as an ontological ordering of humans and Nature in their harmony. Its aim is to create a whole new way of thinking and doing, a new philosophy of life, or a new ecological paradigm. Its approach is **radical** and **holistic**. In the first place, it is radical because it attacks the **root** cause of the ecological crisis. In the second place, deep ecology is holistic as opposed to reductionistic. To put it in the Sinitic frame of reference as exemplified in the **I Ching** (The Book of Changes), it is "synchronistic." Ecological thinking cannot be otherwise because, as the ecologist and astute critic of technology Barry Commoner stresses, the "first law of ecology" is the interconnectedness of everything to everything else in the universe. For him, the root cause of our ecological crisis is scientific reductionism which practices the investigation of a complex system in terms of the properties of its parts in isolation.[11] There has now emerged, however, a new conception of science as well as philosophy. As opposed to the conception of science as a completely detached and value-free enterprise, science or scientific activity itself is viewed as an active interplay of man and Nature. The scientist is not a passive observer or onlooker but is an active participant on the stage of life in the natural and social milieu. Man and Nature, subject and object, and theory and practice are not separate realities but are rather complementary poles of the same reality. Science is indeed a human project and achievement which is founded upon and necessarily abstracted from the total horizon of meaning and value inscribed in the prescientific, common-sense world.[12]

II

Anthropocentrism propelled by the ideology of progress is without doubt the root cause of our ecological predicament today. As such, it is the antithesis of deep ecology. Anthropocentrism is an ordering of humans at the apex of all creation: one recent author calls is "the arrogance of humanism."[13] According to Loren Eiseley:

> [I]t is with the coming of man that a vast hole seems to open in nature, a vast black whirlpool spinning faster and faster, consuming flesh, stones, soil, minerals, sucking down the lightning, wrenching power from the atom, until the ancient sounds of nature are drowned in the cacophony of something which is no longer nature, something instead which is loose and knocking at the world's heart, something demonic and no longer planned--escaped, it may be--spewed out of nature, contending in a final giant's game against its master.[14]

The attitude of arrogance is manifested in modern (Western) man as "historical man." Mircea Eliade shows that by **inventing** history independent of Nature, modern humans have replaced the "imitation of nature" with the "terror of history."[15] In **The Vocation of Man**, Johann Gottlieb Fichte exemplifies this historicism when he writes that "I will be the lord of Nature, and she shall be my servant. I will influence her according the measure of my capacity, but she shall have no influence on me."[16] Even an apparently innocuous statement such as "man himself is an endangered species" is incipiently anthropocentric or has at least an anthropocentric overtone.

The Christian conception of historical linearism underwrites and buttresses the ideology of progress; and Christian messianism is readily translated by some Christian thinkers even today into the new messianism of technology. Progress *is* progress **for** man, for **man** alone. Christianity has been an anthropocentric religion and a spiritual inspiration for the material progress of Western civilization in the exploitation of Nature. The Biblical view of man and Nature--like Fichte's--unmistakably expresses the relationship of the master and the servant, setting up a spiritual stage for the sharp division and opposition between man and Nature and for the subjugation, domination, and exploitation of one by the other. The Christian philosopher of history Arnold J. Toynbee observes: "God had created the world; the world was his to do what he liked with; he had chosen to license Adam and Eve to do what **they** liked with it; and their license was not cancelled by the Fall."[17] The term **license** is best understood as a double: first, to grant and second, to abuse or trespass. Genesis (I: 28) speaks of man's absolute domination over other living beings and nonliving things in Nature. In Christianity as in modern science and technology, Nature is desacralized and denigrated. The exaltation of the "spiritual" gift of man endowed by God provided Western man with an impetus and perfect justification for the desacralization of Nature as a disponsable bundle of materiality. In his celebrated and often anthologized artilce, "The Historical Roots of Our Ecologic Crisis" (1967), Lynn White, Jr. sees the issues of ecology as fundamentally religious, because they are deeply conditioned by man's ultimate concern for his Nature and destiny.[18] White is, as is Toynbee, extremely critical of Christianity, the religion of modern (Occidental) man. He calls it the most anthropocentric religion the world has ever seen, and he points out that, unlike "pagan animism," Christianity confirms a man-Nature dualism under which, by divine mandate, man gains the monopoly of spirituality and thus is privileged to dominate and exploit Nature for whatever he chooses and whatever means he employs. In the end, White proposes St. Francis of Assisi as "a patron saint for ecologists," for in that saint he finds a Christian, Western champion of the spiritual autonomy of all parts of Nature and an enemy of man's absolute spiritual sovereignty over Nature. White has opened a floodgate for re-envisioning or recasting Christianity in a more favorable light to ecology.

As for Marxist humanism, it was meant to be an antithesis of Christianity and bourgeois civilization. First and foremost, it is

a critique of capitalism whose development was fostered by the spirit of Christianity in the destruction of Nature and the alienation of humanity from both itself and Nature. Although from Ludwig Feuerbach to Karl Marx and Herbert Marcuse there is a breakthrough in the conception of man as a natural, sentient, and embodied being, Marx both secularized the vision of the Judaeo-Christian millenarianism in the tradition of the Enlightenment and inherited in significant measure the vision of Hegel's historicist anthropocentrism. Moreover, it is true that Marx, the young Marx, spoke of a future society based on the union of man with Nature or of the naturalism of humanity and the humanism of Nature. His ideal society would eventually emancipate man from the sense of domination and possession and replace work with the free play of leisure. It should be noted, however, that the free play of leisure comes **only after** material abundance and affluence. In the end, however, Marx was influenced by the English classical labor theory of value which undergirds his conception of man as **homo faber**. By his toil, **homo faber** makes useful the wilderness of Nature which John Locke called "waste." Moreover, Marx was a victim of the untamed optimism of the Enlightenment for humanity's future progress with the aid of technology. The saga of Marxism has in large measure been an integral chapter in the flow of Western history channeled by the indomitable spirit of progress with the aid of science and technology.

Technology is the kernel of anthropocentrism and the ideology of progress regardless of different political and economic systems. Because technology is a cultural artifact hammered out of the wilderness of Nature or intends "the death of nature out of the sockets of iron weapons" (to borrow the phrase of Vincent Scully),[19] deep ecology as a philosophy of ecological harmony must include a critique of the technological as an integral component.

Science and technology go hand in hand. The conquest of Nature through technology for so-called human progress has its foundation in the theoretical sciences of nature, especially physics. It was Francis Bacon who was the poetic spokesman for science and who built an intellectual edifice for the popular **ethos** of modern technological-industrial civilization. He was the eloquent, supreme spokesman for progressive humanism and technomorphic civilization. In pursuit of "earthly paradise," his "enlightened" philosophy of man and Nature justified the "greening" of modern scientific, technological, and industrial civilization and, despite all his good "humanist" intentions, opened Pandora's box. In his philosophy, Nature was transformed into the world of inert matter and objects which can be manipulated by calculation and experiment for "utility" (**utilitas**) and "power" (**potentia**). For knowledge **is** power. By increasing knowledge through "the inquisition of nature," man is capable of extending his dominion over Nature for his benefit. Bacon envisioned utility and power as laying the foundation for overcoming the necessities and even the miseries of humanity. The framework of modern technology as instrumental rationality is laid down by Bacon when he insists on the meaning of human knowledge and power as one and finds "in the womb of nature many secrets of excellent use." Bacon acknowledged the fact that the fruits of science do not grow on books. In **The Advancement of Learning**, he scorns the idea of studying "words" rather than "matter," for "words are but the images of matter; and except that they have life of reason and invention, to fall in love with them is...to fall in love with a picture." Speaking of "degenerate learning" among the Schoolmen, he felt that they had "sharp and strong wits" and "abundance of leisure" in "the cells of monasteries and colleges" but that they knew little history of Nature or "no great quality of matter," i.e., their "cobwebs of learning" produced "no substance or profit."[20]

III

The Baconian conception of technology as **instrumentum** or instrumental facilitation for human well-being and progress has now been replaced by autonomous technology. With this radical shift, the traditional and end-and-means continuum is reversed: **means has become end itself**. Indeed, there is no one who captures the essence of technology as autonomous better than Heidegger, when he insists that the **essence** of technology (**Technik**) is no longer technological.[21] In the first place, technology is a fixed order which is autonomous rather than instrumental. In the second place, to say that the essence of technology is not technological is to say that technology as **instrumentum** has been transformed into a teleology. Here again, Heidegger's insight into the question of technology is enlightening. He contends that we have yet to grasp fully the nature of technology in which man himself has become its "functionary." Technology is no longer simply a means to human activity or the human **telos**. For it is not merely the application of mathematical and physical sciences to **praxis**, but is rather a **praxis** itself. As such, the traditional rationale of technology as **instrumentum** is obsolete. Nonetheless, we continue to justify the "end" of technology in terms of this outmoded idea of **instrumentum**. In so doing, we still view technology as **morally neutral** and forget that in technology end has already been subverted by means. In today's world which is dominated by technology, this anachronism constitutes the poverty of moral thinking **par excellence**. This teleological lag, as it were, shows that the advancement of technology is no guarantee for the advancement of moral thinking. The political theorist Langdon Winner calls this happening of autonomous technology "reverse adaptation" in which "[t]echnical systems become severed from the ends originally set for them and, in effect, reprogram their own operation. The artificial slave gradually subverts the rule of its master."[22]

This obsolete way of justifying technology as instrumental is an integral part of that historical process which Max Weber called "rationalization" (**Zweckrationalitaet**). Following Friedrich Schiller's expression the "desacralization of nature" (**Entgoetterung der Natur**), Weber called this historical process of "rationalization" the "disenchantment of the world" (**Entzauberung der Welt**) in his famous lecture on "Science as a Vocation" (**Wissenschaft als Beruf**) in 1922.[23] Weber's seminal idea of "rationalization" or the "disenchantment of the world," first of all, points to science itself as a motivating force for the progression of modern society and history. "Rationalization" parallels the historical "progress" of scientific and technological thinking that has displaced the "magical" elements of human thought. It means, according to Weber, that

> principally there are no mysterious incalculable forces that come into play, but rather that one can, in principle, master all things by calculation. This means that the world is disenchanted. One need no longer have recourse to magical means in order to master or implore the spirits, as did the savage, for whom such mysterious powers existed. Technical

means and calculations perform the service. This above all is what intellectualization means.[24]

By undermining or replacing the mystical, cosmic, religious, and moral systems of the past, does not this demystification of the "magical" by way of measurable calculation remystify and even deify the demystified itself? Be that as it may, in the conceptualization of human action, the principle of "rationalization" reduces the rationality of action to the calculation of the **most effient means** of achieving its goals. No wonder, **efficiency** becomes the norm of everything we do in technocratic society.

The "rationalization" of the world continues and is exemplified in and heightened by Marshall McLuhan's philosophy of communication and communication technology. Indeed, he is a philosopher of culture who is also one of the most outspoken apostles of our age as the age of electronic technology or, shall we say, autonomous technology. The quintessential line in McLuhan's advocacy of electronic technology is: **the medium is the message**. For him, the 'content' of a medium is like the juicy piece of meat carried by the burglar to distract the watchdog of the mind."[25] What would be, we might ask, the content of the human mind, if it is not stuffed with enframed images "processed" by technology? In the last analysis, there **can be no ethics** in autonomous technology, because it makes obsolete the traditional rationale of technology as **instrumentum** that serves the **telos** of man. The reversal of end and means is endemic to technocratic mentality and characteristic peculiarly of autonomous technology. It is an integral and indispensable part of "rationalization" accompanied by the rise and dominance of scientific and technological thinking (i.e., thinking by calculation). To "rationalize" or "instrumentalize" ends is to norm/alize "efficiency" as the end of our conduct--the operational demand of technocratic mentality and society. The "rationalization" or "instrumentalization" of our conduct is the end of the Kingdom of Ends. The reverse side of this "instrumentalization" is the moral truism or naive moralism that "guns don't kill people; only people kill people." Surreptitiously it invokes the idea of "people."

The "instrumentalization" of ends raises the celebrated question of the "banality of evil" whose opposite is the **ethics of responsibility**. The "banality of evil" is the profound idea Hannah Arendt coined in order to characterize Adolf Eichmann as the paradigmatic case of the **violent terror** of unthinking men, men of moral indifference, and so to justify the death penality imposed on him by the Israeli Government in 1962. For Arendt, Eichmann as doer was neither monstrous nor demonic, but the result of his deed was atrocious, indeed. Indifference or lack of intention to murder does not absolve one's guilt and responsibility for a crime. Objectively speaking, therefore, Eichmann is no less guilty and deserving of death than he was monstrous or demonic. In the same way, Arendt's idea of the "banality of evil" can very well be applied to the even unintended "evil" consequences of technology itself. First of all, the possibility of moral thinking depends on the notion that we are responsible moral agents, that is, our ethical conduct presupposes the intentional activation of meaning. To be responsible is to choose one meaning or value over others in the configuration of both ends and means. Second, the ethics of responsibility must not be equated with an ethics of pure intention and principles alone. Nor should it be confused with an ethics of consequences with disregard for intention and principles. One without the other is insufficient because it is one-sided: By focusing on intention and principles alone, one loses sight of consequences, whereas weighing only consequences, the other forgets intention and principles. The ethics of responsibility must be an ethics of fulfillment in that it fulfills the principled intention of an action in light of the consequences it produces or will produce, whether it be verbal or nonverbal. We do not have to go as far as invoking the uncommon jurisprudential principle that technology is guilty until proven innocent! The "banality of evil" points to the "guilt" or liability of technology despite its allegedly "innocent," "benign," or "good" intention to serve humanity's well-being. Quite often, good intentions produce bad consequences for which we ought to be held responsible. To reenchant the world, to deconstruct technology, in sum, is to restore the essence of man as **moral being**. Or else, history will indeed be a nightmare from which there is no awakening. When we become "automated" and "cybernated," we cease to be morally responsible agents. The denial of man's moral agency, or nihilism, is implied in, and the end of, autonomous technology. Critique of the technological must without doubt be the **subversion** of this nihilism.

IV

In conclusion, I wish to propose the idea of **ecopiety** for subverting and transgressing anthropocentrism whose essence inheres in technological rationality. To reenchant the world is to harmonize humans with Nature and to deconstruct the technologization of the world. Ecopiety is abundantly Sinitic. Interestingly, Joseph Needham's monumental treatise on Chinese civilization has been acclaimed universally largely because it shows the high achievement of science and technology in China, ancient China--the land of Confucius, Lao Tzu and Chaung Tzu.[26] There is, however, an ironical twist in this slightly misguided acclamation because, Needham's monumental accomplishment notwithstanding, it mirrors our age as the age of science and technology.

Be that as it may, the aim of ecopiety is to harmonize humans with Nature. What is harmony? It is a musical concept in which Nature may be described as a **gathering** of many earthly beings and things as an ordered whole: as it assumes a pluralistic universe of living beings and nonliving things, it is a kind of symphony or orchestration of the differentiated many. By using the term **differentiated**, I mean to accentuate the idea that all beings and things cannot be flattened to a single equation or a fixed formula of equivalences. In this regard, both anthropocentrism and naturalism are equally one-sided, that is, they are false: one overvalues humans, whereas the other undervalues the existential eccentricity of humans as **moral beings** who are capable of **activating** meaning and value. To use a Pascalian expression, humans are somewhere in the middle between nothing and everything. The term **in** as in "humans **in** Nature" or "humans **in** the landscape" is an ecstatic one in that as an intentional being man is not simply an inert object or matter. In other words, the harmony of humans with Nature is man's way of **attuning** him/herself to the world both natural and social. Mood modulates the **tonality** of his or her existence in or in relation to the world. Precisely because mood is not a psychological or subjective category, harmony too cannot be defined as an anthropocentric or human-centered category.

To recapitulate: harmony constitutes the keyboard of understanding **reality as social process**, for only where there is social

process, is there reality and where there is no social process, there is no reality. Harmony is thus not the unitariness of the undifferentiated but a polyphonic chord or orchestration of the differentiated many. By social process based on the musical conception of harmony, we mean an intoned nexus of relationships between humans and Nature on the one hand, and between human and human on the other. These two spheres deeply affect each other. We name the encompassing principle of social process among all earthly beings and things as **ecopiety** which may be divided into two subcomponents: **homopiety** and **geopiety**.

ECOPIETY = HOMOPIETY + GEOPIETY

Homopiety refers to the **conviviality** of human with human and geopiety the **connaturality** of human with Nature. As the Greek **oikos**, from whose etymology both ecology and economics are derived, signifies the "household" (a circle of family, relatives, and friends), both conviviality and connaturality are two different ways of saying **filiality**--a term of endearment for the Sinitic mind in weaving the basic fabric of social, political, economic, and moral relationships. The unity of ecopiety is "synchronized" in the **yang** of homopiety and the **yin** of geopiety as complementary. One cannot do without the other-- and whose combination, I might add, is multifaceted.

Above all, ecopiety signifies the attitude of **reverence** for all earthly beings and things. It is the sacrament of interexistence that affirms the "I-Thou" rather than the "I-It" relationships--to employ the language of Martin Buber. The attitude of reverence should be applied to our own artifacts as well as things social and natural. What is so revealing and saddening about technomorphic mentality is that man is irreverent even to his own artifacts: junkyards and chemical dumps, for example, show no reverence for his own artifacts and products. Geopiety as reverential composure for the "natural spontaneity" of Nature confirms the **intrinsic** value of Nature as it is in itself, rather than for its use value, its **extrinsic** value. It is, I think, the stark contrast between art and technology--art for intrinsicality and technology for extrinsicality. In Sinism, there is also an ineluctable connection between the aesthetic and the ethical: the beautiful and the good are intertwined. As the aesthetic is the harmony of man with Nature, so the good is the harmonious relationship between human and human. Harmony is, therefore, the essence not only of the aesthetic (the musical) but of the social as well.

In the end, there is no science of the future since the future is unpredictable, that is, it is made by us as responsible agents. The future as history will, indeed, be of our own choosing and making. As Chinese logoography composes "crisis" in combined characters of "danger" and "opportunity," our option is clear at the time of the ecological crisis: we have an opportunity of subverting and transgressing the Great Chain of technocentric civilization toward the reclamation of ecopiety. The prospects of our future depends on this radical and momentous choice and switch.[27] Indeed, when we are at the edge of history, ecopiety offers us a radical way of defenestrating technocentric civilization.

Notes

1. For extended discussions with full documentation by the author of the issues raised in this paper, see "The Orphic Voice and Ecology," **Environmental Ethics**, 3 (Winter 1981): 329-340; "The Harmony of Man and Nature: A Philosophic Manifesto," **Philosophical Inquiry**, 8 (1986): 32-49; "Heidegger's Way with Sinitic thinking," in **Heidegger and Asian Thought**, ed. Graham Parkes (Honolulu: University of Hawaii Press, 1987), pp. 217-244; "The Genealogy of Technological Rationality in the Human Sciences," **Research in Philosophy and Technology**, ed. Carl Mitcham, forthcoming; and "The Medium as Technology: A Phenomenological Critique of Marshall McLuhan," in **Phenomenology and the Understanding of Human Destiny**, ed. Stephen Skousgaard (Washington, D.C.: University Press of America and Institute of Advanced Research in Phenomenology, 1981): 45-80.
2. For a synoptic survey of postmodern epistemology including the cybernation of knowledge and the computerization of society, see Jean-Francois Lyotard, **The Postmodern Condition: A Report on Knowledge**, trans. Geoff Bennington and Brian Massumi (Minneapolis: University of Minnesota Press, 1984). For a definition of the philosophy of technology in this postmodern condition, see Carl Mitcham, "What Is the Philosophy of Technology?," **International Philosopical Quarterly**, 25 (March 1985): 73-88. For an extensive survey of the contemporary philosophy of technology with a focus on European thinkers, see Egbert Schuurman, **Technology and the Future**, trans. Herbert Donald Morton (Toronto: Wedge Publishing Foundation, 1980).
3. See **The Fate of the Earth** (New York: Alfred A. Knopf, 1982).
4. This is the recent title of Sherry Turkle's study on the state of computer science and artificial intelligence: **The Second Self: Computers and the Human Spirit** (New York: Simon and Schuster, 1984).
5. By the Panopticon, I mean Jeremy Bentham's meticulous, architectural plan in the last quarter of the eighteenth century for an ideal prison-house or inspection house. See vol. 4 of **The Works of Jeremy Bentham**, 11 vols., reprinted from the Bowering Edition of 1838-1843 (New York: Russell and Russell, 1962). For a stimulating interpretaive essay on Bentham's Panopticon, see Michel Foucault, **Discipline and Punishment**, trans. Alan Sheridan (New York: Panteon Books, 1977), pp. 195-228.
6. See **The Complete Psychological Works of Sigmund Freud** (Standard Edition), trans. James Strachey, 24 vols. (London: Hogarth Press, 1961), 21: 57-145.
7. See Donella H. Meadows **et al.**, **The Limits to Growth** (New York: Universe Books, 1972).
8. "The Shallow and the Deep, Long-Range Ecology Movement: A Summary," **Inquiry**, 16 (Spring 1973): 99.
9. **What Is Called Thinking?**, trans. Fred D. Wieck and J. Glenn Gray (New York: Harper and Row, 1961), p. 4.
10. **Ibid.**, pp. 16-17.
11. See **The Closing Circle** (New York: Alfred A. Knopf, 1971).
12. See, for example: Werner Heisenberg, **The Physicist's Conception of Nature**, trans. Arnold J. Pomerans (New York: Harcourt, Brace, 1958); Thomas S. Kuhn, **The Structure of Scientific Revolutions**, 2nd rev. ed. (Chicago: University of Chicago Press, 1970); and Stephen Toulmin, **The Return to Cosmology** (Berkeley: University of California Press, 1982).
13. See David Ehrenfeld, **The Arrogance of Humanism** (New York: Oxford University Press, 1978).
14. **The Firmament of Time** (New York: Atheneum, 1960), pp. 123- 124.
15. See **The Myth of the Eternal Return**, trans. Willard R. Trask (New York: Pantheon Books, 1954).
16. Trans. William Smith (La Salle: Open Court, 1946), p. 29. For the most comprehensive survey of anthropocentrism in European intellectual history, see Clarence J. Glacken, **Traces on the Rhodian Shore** (Berkeley: University of California Press, 1967).
17. "The Genesis of Pollution," **Horizon**, 15 (Summer 1973): 6.
18. In **Machina ex Deo: Essays in the Dynamism of Western Culture** (Cambridge: MIT Press, 1968), pp. 75-94.
19. Vincent Scully, **The Earth, the Temple, and the Gods** (New Haven: Yale University Press, 1962), p. 7.
20. See **Selected writings of Francis Bacon**, ed. Hugh G. Dick (New York: Modern Library, 1955).
21. For Heidegger's discussion of technology, see **The Question Concerning Technology and Other Essays**, trans. William Lovitt (New York: Harper and Row, 1977).
22. **Autonomous Technology: Technics-out-of-Control as a Theme in Political Thought** (Cambridge: MIT Press, 1977), p. 116.
23. See **From Max Weber: Essays in Sociology**, trans. and ed. H.H. Gerth and C. Wright Mills (New York: Oxford University Press, 1946), pp. 129-156. Morris Berman takes up on this Weberian theme of the "disenchantment of the World" and proposes the transformation of it in **The Reenchantment of the World** (Ithaca: Cornell University Press, 1981).
24. **From Max Weber**, p. 139.
25. **Understanding Media** (New York: McGraw-Hill, 1964), p. 18. See also his **magnum opus**, **The Gutenberg Galaxy: The Making of Typographic Man** (Toronto: University of Toronto Press, 1962).

26. See **Science and Civilization in China**, 5 vols. (Cambridge: University Press, 1954-1983).
27. In **The Minimal Self** (New York: W.W. Norton, 1984), Christopher Lasch lashes out and deplores what he calls the "siege mentality" and "survivalism" including the ecology movement. While I agree with his positive tone, I question his minimization of the issue of survival.

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HEIDEGGER AND MARX: INAUTHENTICITY, ALIENATION AND TECHNOLOGY

Jerry S. G. Donaldson

I

In his essay "Marx and Heidegger on the Technological Domination of Nature" (**Philosophy Today**, Summer 1979), Michael Zimmerman develops a contrast between the thought of Karl Marx and that of Martin Heidegger about the destructive and exploitive aspects of modern industrial technology. By "technology" Zimmerman means "all facets of the complex system of production and distribution which emerges with the practical application of calculating, objectifying rationality."[1] I believe that this definition is too narrow, and is too easily construed in a pejorative sense because of what I take to be the negative connotations of the terms "complex" and "calculating." I would therefore prefer to use Arnold Pacey's definition of technology, which is: "the application of scientific and other knowledge by ordered systems that involve people and organizations, living things and machines."[2]

Zimmerman notes that for both Heidegger and Marx, "technology is not intrinsically destructive, but is at present used in exploitative and harmful ways."[3] In the Heideggerian view, the negative effects of technology will continue as long as humans insist on seeing the human individual as the subject and goal of history. The unfolding of history, moreover, is not determined to any great degree by the practical action of human beings, but rather by the "historical play that leads to unexpected changes in our understanding of what things are."[4] For Marx, on the other hand, exploitive technology is merely the hallmark of this particular stage of the historical development of humankind's social and productive relations, and this stage is characterized by the reality of class divided society. After the present capitalist relations have been revolutionized on a world-scale into humane, truly social relations, then class divisions will cease to exist, and technology will no longer be used by one class to exploit another, but rather it will be used to fulfil the real needs of all members of society. Zimmerman holds that in Marx's communist society, however, Nature will still be regarded by and large as having only instrumental value as a storehouse of resources for the use of humankind. Hence, "Marxism can be seen as another expression of human arrogance."[5]

In developing this contrast between Heidegger and Marx, Zimmerman is disregarding the importance of the concept of alienation in Marx, and is disallowing that at the final stage of the proletarian revolution there is to occur a radical transcendence of humankind's historical condition of self- alienation. This transcendence necessarily involves a radical change in the realization of what it is to be fully human. Marx's concern with alienation is arguably continuous throughout his writings, and Zimmerman does note the opinion of some commentators, that Marx was calling for a transformation of humans and "not a continuation at the collective level of the same destructiveness which characterizes individual ownership of the means of production."[6] Given this, "at a certain level Marx and Heidegger seem to be saying similar things about the proper functioning of human being."[7] This fairly common alternate reading of Marx is dismissed, however, and Zimmerman indicates that, along with Alfred Schmidt and others, he believes the Marxist vision of true socialism is one of fundamentally unchanged human beings extracting resources from the Earth at an ever increasing rate, with the "aid of giant technology, and the smallest possible expenditure of time and labour.[8] I will develop an outline of the alternative "alienation" reading of Marx in order to show that Heidegger and Marx may not be as far apart of the subject of technological domination as Zimmerman claims.

II

In **Being and Time** Heidegger explores the concept of being, of what it is for something to "be." His point of departure is the premise that to be human is to be "a self in a world with objects and with others."[9] In history it is possible for the self to become entangled in one aspect of its being, in the conditions of its immediate existence. One's being is thereby claimed by the cares and concerns of the everyday world into which one is "thrown." There is another dimension to one's being, however, which "is the possible ways of being that have not yet become closed off by reality,"[10] and that which Heidegger refers to as "inauthentic" being is the condition whereby the demands of "being in" one's immediately determined existence causes one to lose sight of this "being toward" as a possible free existence. In short, one is separated from one's being in the full sense.

Heidegger holds that the prevailing attitude toward Nature, which is the general feeling that Nature can and ought to be dominated by humankind through technology, is a function of inauthentic being. With the development of scientific technique in the modern era there arose the assumption that the human

being is a "self-certain Subject." The objects of the non-human world present themselves to the Subject, and their reality is established only through the way in which they are seen as being of some use to the Subject. From this perspective,

> there begins a self-enhancing drive for domination which eradicates alternative interpretations of humanity and nature. Heidegger believes that once man is blinded to the fact that the essential vocation of human existence is to be the "house of being," or the vessel through which the cosmos can reveal itself in novel ways, then man himself is able to be regarded as a mere object whose exploitation is justified in the quest for more power.[11]

As long as the assumption that the human being is the subject and goal of history prevails, then inauthentic human existence and technological domination of Nature will continue, regardless of changes in social, political or economic arrangements. According to Heidegger, the transformation of technology from its present destructive manifestations into non-exploitative, more appropriate forms, presupposes a radical change in the understanding humans have of their relationships with Nature. This change will not be brought about through human activity, but rather by what he calls "an act of destiny," an enlightenment moment originating **outside** of the stream of history, and, seemingly, therefore not continuous with the evolution of human understanding **in** history.

In Marx's view, self-alienation, the separation of humankind from its essential beings, has been the central fact of existence since the beginning of history, which for Marx was the moment that material production first became a cooperative undertaking. Alienation is both cause and effect of the class-divided nature of all economic systems, or modes of production, throughout history up to and including the present capitalist mode. The mode of production in a given society is fundamental to the attitudes and belief systems of every other area of human endeavour; it provides the light under which all of these are to be analyzed. Human essence (remember, that in the Marxist sense, human always means 'human' "writ large" in the species 'human') **is** free conscious activity. The human being realizes his or her essence, and the essence of one's species life, through the way in which one objectifies oneself by freely appropriating and transforming the objects of the world around one. As an objectifying species, humankind expresses itself in real sensuous objects and the non-human world, therefore, can be the self-expression of humankind. Work as free activity is humankind's self-creation: A human being posits objects and is in return posited **by** objects. Labour, therefore, is not merely one of humankind's activities, but is its **essential** activity.

> Nature is man's inorganic body--nature, that is, insofar as it is not itself the human body. Man lives on nature--means that nature is his body, with which he must remain in continuous intercourse if he is to survive. That man's physical and spiritual life is linked to nature means simply that nature is linked to itself, for man is a part of nature.[12]

In the capitalist mode of production labour is not free activity, for the most part. The objects of labour are not objects of self-expression but are commodities, the value of which is measured by their exchange value in the market, and the conditions surrounding production of these are established by the one who owns them, one other than the worker himself. "The worker is not a man in the totality of his life expression, but a non- person, the purely physical subject of abstract activity."[13]

Alienation is inherent in a system where private ownership of the means of production assures their utilization in the production of profits for a few rather than real benefits, material and otherwise, for all the members of society. (It should be noted that the greed and self-serving attitudes which appear among capitalists are functions of their own alienation. This point is often lost in discussions of Marxist theory and praxis.) Alienation cannot be overcome except by the revolutionization of the existing modes of production, and a return theory to what Marcuse referred to as "true property," which means "[t]he availability or usability of all the objects that man needs for the free realization of his essence."[14] The first step in the process of revolution is the seizure of the means of production by the proletariat. At the final stage of the proletarian revolution, after ownership of the means of production have been vested in society as a whole, "and all the springs of cooperative wealth flow more abundantly,"[15] technological and other resources will no longer be controlled by a small minority, but will be available to meet the real needs of all members of society. Because of the essential unity of humankind and Nature,

> this communism is humanism, and as a fully developed humanism equals naturalism, it is the genuine resolution of the conflict between man and nature, between man and man.[16]

Freed, for the most part, from the alienating necessity of unfree labour, humankind's relationship with Nature will take on an aesthetic dimension:

> Man is to enter into an I-Thou relationship with the human nature that exists outside of himself. And this, finally, is what Marx means by "society". Communism is the emergence of society as a communal relation between the future aesthetic man and his dis- alienated world.[17]

The self-realization of humankind **qua** free, conscious producers **through** free, conscious production, is the supercession of alienation **and** the reemergence of the awareness of Nature's being both as part of humankind and in and of itself.

Therefore, for Marx as well as for Heidegger, the end of the destructive and exploitive use of technology requires that the understanding of the relationship between humankind and Nature undergo a radical revision. While for Heidegger this change can only result from the "act of destiny," the spontaneous coalescence of various facets of human experience into a moment of enlightenment, for Marx practical conscious activity will bring about the material preconditions which will in turn lead to the transformation of human awareness. In the Marxist vision of communist society it is not the case that the technological domination of Nature will necessarily continue.

The main problem with this "alienation" reading of Marx is, of course, that the alienation terminology of the **Manuscripts** is conspicuously absent from the later writings. This had led to the hypothesis that Marx's thought is to be divided into early and mature Marxism, and that the former was later entirely abandoned by Marx in favor of the latter. In **Philosophy and Myth in Karl Marx**, Robert Tucker offers an interesting argument in support of his thesis that individual self-alienation is the touchstone of Marx's project from beginning to end. Tucker's

position is that Marx's later economic writings are an elaborate mystification, a mythology arising from his early insight that all human problems can be ultimately traced to the self-alienation of the human individual throughout history. The human being is aware of a God- like perfection which one cannot hope to attain, and one becomes involved in an egoistic drive to aggrandize oneself through the amassing of material wealth, prestige and the like. This self- aggrandizement is carried on at the expense of the other, creative, merely human side of one's nature. Marx's conception of alienation, Tucker holds, is of a "sickness of the soul" growing out of the human's confusion of himself with deity, and the corresponding drive to become a supra-human being. The conflicting forces of the alienated self became for Marx external social forces, and he came to view society as an image of the conflicting forces within the individual. "Society in other words was envisaged as a self-system whose inner dynamics are those of alienation."[18] The essential character of myth is that its author is unaware that one's belief **is** myth, and in **Capital**, Tucker maintains, Marx produces an elaborate mythology in which the inner conflict of the alienated soul is externalized in the economic life of the species.

> The conflict of the good and evil forces of the soul, its constructive and destructive sides, appears to be resolving itself externally. For Marx the outer reality is social reality, and the conflict appears as a war of classes into which society has split. The contending forces of good and evil are respectively the productive powers lodged in the proletariat, and the inhuman force of capital incarnate in the bourgeoisie.[19]

In Tucker's reading, therefore, there is no reason to suppose that revolutionary praxis will necessarily bring about the end of alienation, which in turn is to lead to a new understanding of the interrelationship between humanity, technology and Nature. This is not to say that there is no connection between the overcoming of alienation and the associated drive for self- aggrandizement in the individual, and the resolution of the drama of class conflict and exploitation that is played out in the economic life of the species. It is only to point out that the achievement of one does not necessarily presuppose the achievement of the other. The transformation of the human being that Marx describes in mystified form as a social undertaking is in reality an **individual** project, "a work of self-clarification, or self-changing."[20] Given the above, it would appear that Marx and Heidegger are in agreement that the return to authentic existence, or the transcendence of alienation, is the function of a radical shift in individual human awareness.

The question remains whether this shift in awareness is produced by the "act of destiny" or by free human activity, in either self-changing or revolutionary praxis. Marcuse dealt with this problem in **One Dimensional Man**. Modern industrial society, he explains, has exhibited unforeseen capacities to contain and deflect real opposition from within. Thus, it is largely successful in channeling all discourse and dissension into the single dimension of technological rationality. Individual needs and interests are conditioned by the requirements of the production and marketing apparatus, and technological rationality is reproduced within the individual to the extent that the private inner space "from which man may become and remain himself" is invaded and "mass production and mass distribution claims the whole individual."[21] To question the basic assumptions of the market society is to behave irrationally and serious opposition to the status quo is either branded as lunatic fringe activity not to be taken seriously, or is co-opted into the mainstream discourse and thereby rendered harmless. (Witness, e.g., the way in which some of the most revolutionary rock music of the sixties and seventies has begun to appear in advertising.) Apart from containing opposition, modern industrial society is in the business of creating demands, and Marcuse notes that

> the most effective ad enduring form of warfare against liberation is the implantation of material and intellectual needs that perpetuate obsolete forms of the struggle for existence.[22]

There is, therefore, a distinction to be made between true and false needs. True needs are those that are freely decided upon by the individual. The attainment of freedom, however, requires that one has recognized what one's true needs are, in order that one may liberate oneself from false, externally imposed needs. At this point, the circularity of needs that characterizes modern "techno-logical" society becomes painfully apparent. Marcuse was once asked whether the transformation of needs is the condition for the transformation of society or if it presupposes it. He replied:

> You have defined what is unfortunately the greatest difficulty in the matter. Your objection is that for new revolutionary needs to develop, the mechanisms that produce the old needs must be abolished, there must first be a need to abolish them. This is the circle in which we are placed, and I do not know how to get out of it.[23]

Toward the end of his life Marcuse came to believe that serious centrifugal forces might develop out of a "biological need" for liberation, and that these might be successful in transcending the prevailing technological rationality. In any case, for Marcuse the real change in human awareness, a new sensibility, is the precondition for any meaningful qualitative change in the structure of human institutions.

Marcuse's analysis, in my view, reveals that human awareness is conditioned by dialectical interchange between the individual and society, internal and external reality, and humankind and Nature. The Marx/Heidegger confrontation regarding the ground of changes in human understanding, (internal or external, through act of being or through act of destiny), comes down to a chicken and egg type of dilemma.

I have posited that for both Marx and Heidegger, an inauthenticity, or self-alienation of the human individual from his or her own true being, underlies the present exploitative and destructive tendencies of modern technology. For each, the achievement of a "higher" state of awareness is the pre-condition for the establishment of non-exploitive, non-destructive technologies and societal forms, and for an appreciation of the natural world for what It is in Itself.

Just how this new awareness, this authentic de-alienated state of being is to arrive remains a moot question. What is clear, however, is that if one accepts, 1. Heidegger's claim that destructive technology is an expression of the inauthentic self- certain Subject's arrogance in believing that the human being enjoys a privileged status of "being," as the ultimate judge of what it is to "be"; 2. The reading of Marx that holds that the determination of uses to which technology is put is coloured by the alienated human's egoistic drive toward self-aggrandizement; and 3. Marcuse's position that most of the ever growing body of

material and intellectual "needs" that characterizes consumer society consist of false needs (that are in many cases the tools of repression and containment), then one is ready to consider how, in a world of freely self-aware persons, most of the destructive technology associated with rampant consumerism and Nature domination would become superfluous.

Notes

1. Michael Zimmerman, "Marx and Heidegger on the Technological Domination of Nature," **Philosophy Today**, Summer 1979, p. 99.
2. Arnold Pacey, **The Culture of Technology** (Cambridge: MIT Press, 1984), p. 6.
3. Zimmerman, p. 99.
4. Ibid., p. 99.
5. Ibid., p. 100.
6. Ibid., p. 107.
7. Ibid., p. 107.
8. Alfred Schmidt, **The Concept of Nature in Marx** (London: NLB, 1971), p. 155.
9. Barry Katz, **Herbert Marcuse and the Art of Liberation** (London: Verso, 1982), p. 68.
10. Ibid., p. 67.
11. Zimmerman, p. 101.
12. Karl Marx, "Economic and Philosophic Manuscripts," in **The Marx, Engels Reader**, ed. Robert C. Tucker (New York: Norton, 1978), p. 75.
13. Herbert Marcuse, "The Foundations of Historical Materialism," in **Studies in Critical Philosophy**, ed. Joris de Bres (London: NLB, 1972), p. 26.
14. Herbert Marcuse, "Freedom and the Historical Imperative" in **Studies in Critical Philosophy**, ed. Joris de Bres (London: LLB, 1972), p. 222.
15. "Critique of the Gotha Program", **Marx-Engels Reader**, p. 531.
16. **Marx-Engels Reader**, p. 84.
17. Robert C. Tucker, **Philosophy and Myth in Karl Marx**, (Cambridge: Cambridge University Press, 1972), p. 159.
18. Ibid., p. 220.
19. Ibid., p. 218.
20. Ibid., p. 241.
21. Herbert Marcuse, **One Dimensional Man**, (Boston: Beacon Press, 1964), p. 10.
22. Ibid., p. 10.
23. Ibid., p. 4.
24. Herbert Marcuse, "End of Utopia" (discussion), cited in Katz, **Herbert Marcuse and the Art of Liberation**.

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POETRY

SORT OF IN MEMORIAM DUE TO ACID RAIN

Helen Andren

The wood surrounds me
with its impressiveness,
with its quietude
and strength.
Here beauty and purpose
are not disparate.
The virtue of what now is,
in its timeless way,
suffices.

SURF

Helen Andren

The waves roll in
in steady rhythm
The silence before each wave
allows unequalled calm.
Standing on the shore,
waiting for boundlessness
to offer itself again and again,
One sees the majesty
of controlled might.

About the poet: **Helen Andren** holds a B.A. from the University of Wisconsin in Madison, and has been writing poetry for 38 years. "Surf" was previously published in **Ambrosia**, published in Milwaukee. Reprinted here with permission of the author.

THE SECULARIZATION OF CONSCIOUSNESS AND THE ARTIFICIAL ENVIRONMENT

Vern Weber

> Ultimately, it will only be those who experience the agony of a psychic claustrophobia within the scientific worldview who will be able to take radical issue with the technocracy--and they will do so on matters that vastly transcend the issues of conventional social justice with which the radicalism of former times filled its now obsolete ideologies. They will see that the expertise we bow before derives from a diminished mode of consciousness. They will recognize that the ideal of scientific objectivity is our common disease of alienation grandly disguised as respectable epistemology. They will come to understand, in their pursuit of a reality justly proportioned to the full dimensions of our human nature, that it is the culture of science from which we must liberate ourselves if we are to be free spirits.
>
> Theodore Roszak, **Where the Wasteland Ends**

I am beginning this essay with a presupposition, which in itself may disqualify my argument from the serious consideration of certain readers. My presupposition is that meaningful human existence is inextricably tied to the continuum of Nature, and that only when we become consciously aware of this shared continuum and actively engaged with its processes can we attain all that life has to offer our existence. This is a presupposition in the sense that the means and methodologies by which our culture presumes to know Nature, indeed the cosmos, cannot account for the character which our relationship with Nature embodies; this relationship is not verifiable or quantifiable by the methods of modern science. The tradition of modern science, with its cornerstone emphasis on "value free" objectivity, cannot properly contemplate the "value-laden," somewhat intangible, character of our organic relation to Nature. But I am convinced that a tacit knowledge of our communal relationship with Nature silently stirs deep within us all. The voice of this "other" knowledge speaks more audibly to some than to most others, but it is potentially accessible to all. This voice, however, which elucidates our ties to the continuum of Nature, has been silenced by another environment. This is the artificial environment[1] and it has, seemingly, risen up to bury and supplant the natural environment. It seeks to sever and usurp our ties to the natural environment and this it does in the name of progress. The artificial environment of which I speak rests on the foundations of modern science and its landscape is a technological one.

It is not my intention to employ the term "artificial environment" in a strictly derogatory manner to measure the extent to which the modern urban-industrial metropolis has transformed the natural environment which enveloped (and which in some areas still envelop), pre-industrial humanity. To do so would simply be opportunistic. Nor do I wish to use the term to denote all activity, artifacts, or institutions which mediate existence between humanity and Nature. To do this would indeed betray my admittedly limited understanding of human life itself, for what is culture if not a "buffer-zone" between humanity and Nature created through the activity, artifacts, and institutions of human groups? The artificial environment, then, does not simply refer to the man-made world which sits atop the world of Nature, for it is possible to create a new world and still maintain a deep relationship with the natural world. Rather, the artificial environment, in this essay, refers to those aspects of our self-made environment which display no empathy with, acknowledgement of, or respect for the continuum of Nature. Even a simple chair, as D.T. Suzuki has pointed out, can be placed within this continuum. In the process of coming into existence as a chair, the chair will first pass through a mediating stage, whereby human labor transforms material into what eventually becomes "a chair." To the degree that humanity--which is inextricably placed within Nature's continuum--imbues the chair with an essence derived from humanity's own intimate contact with the continuum, even a simple chair can embody a relationship to the natural world. Conversely, to the degree that humanity loses contact with its natural continuum is the degree by which the chair falls short of bearing any relation to the natural world. Our contemporary technological structure, in order to sustain and perpetuate itself, tears away at the ties which bind us to the continuum of Nature.

Today, the means by which we satisfy our needs and satiate our wants increasingly bears little respect for the natural world and little consideration for our own insoluble bonds with Nature. Because we are so inextricably a part of Nature's continuum, by distancing ourselves from It we also distance ourselves from ourselves and from each other. This process of creating distance culminates in the strong sense of alienation which permeates the human being, or the Being of humanity. The roots of our alienation, however, run deep, and so their ultimate source of origin remains difficult to grasp. It is the "something" which many will wrestle with for much of their lives; it is the condition which sets many wandering from one path to another, in a restless search for something which they cannot clearly articulate. Why does this sense of alienation remain so intangible? Perhaps it is because this permeating ambience of alienation is inherent in that which most immediately surrounds us, and which therefore goes unnoticed. We are born into a particular cultural reality; we define ourselves within the parameters of the environment that surrounds us. Various environments, as modes of consciousness and culture, have existed and continue to exist throughout the world, and all modes of consciousness are relative to a corresponding ordering of society. Western consciousness, then, creates a certain kind of reality; it may be, however, that this particular "reality" is but one of many within the cosmic vision that includes all such "realities." The process of creating such a cultured reality, or "coding," appears as an "organic secretion" of one's cultural group. The particular constructed reality in which

we live, therefore, appears almost as natural to us as an outer layer of skin. Yet something is amiss.

I am suggesting that the reality construct in which we live is imposed upon us, rather than "secreted" by us. I do not wish to convey the impression that reality somehow operates irrespective or our presence, or that the technological processes which assist us in shaping our environment and which, reciprocally, influence the shape of the lives we lead, somehow function autonomously of our involvement. My claim is that the objectification of our way of knowing the Universe has required the suppression of subjective modes of knowing It; subjective modes of analysis which may incorporate aspects of personal experience into the methodological process, are denied any (official) credibility as a valid means for attaining truth. However, the authority and status we ascribe to a value-free, objective science is itself nothing less than an ideological position formulated in accordance with definite interests, preferences and prejudices. The tradition of modern science places value upon being "value- free" and objectifies "objectivity" as being the appropriate method by which to maintain a value-free science. By contrast, the attainment of a personal wisdom, as a measure of authentic, practical knowledge, is given little credence and is viewed in a somewhat derogatory light by those who place their faith in the artificial environment. Such is the extent to which the claims and premises of scientistic technology have coalesced into the subliminal boundaries of the contemporary mindscape. Having codified the boundaries of a constructed reality, the worldview of science/technology is able to perpetuate itself by continual reference to the very "reality" which it has given rise to. It is by its calculative ability to perpetuate its own reality construct that I call the reality of the artificial environment as one of imposition.

Lest the present essay begin to acquire an overbearing polemical tone, it bears repeating that our own personal reality, regardless of any alienating tendencies, is legitimately our own. We do "wear it," as if an outer layer of skin, though perhaps an ill-fitting one. Despite my contention that we process our reality through our technological means (about which more will be said) rather than secrete it, our reality construct nevertheless maintains the same validity as other historical realities or present day "foreign" realities. It has, in fact, been a foregone presumption on the part of modern Western culture to consider itself as the only true reality (or as the truest reality), while other realities are marred by unknowing, superstition, or immaturity. Our internalization of such attitudes accounts for our stance of superiority and enlightened tolerance towards so- called "primitive" peoples. Even many anthropologists who live among, and sincerely love, the people they "study" conceive of themselves as learning, or appreciating, another people's **conception** of the world/universe, as opposed to learning something of the way the world/universe is in **actuality**. As already mentioned, however, modes of consciousness are relative to the character of the particular social contexts in which such modes are embodied. All human reality is in part symbolic, it is the coding of the symbolism which makes communication and culture possible. If this be the case, then, are we to concede that the truths of a culture whose mode of consciousness may be called "participatory" (as characterized by a lack of any rigid subject/object dichotomy) are as valid as the truths of a culture whose mode of consciousness may be called "Cartesian" (as characterized by a strict subject/object demarcation and by a mechanistic view of the universe)? Is our reality then completely relative? And if it is, how are we to make epistemelogical judgements about "absolute truth?"

In answer to this last question it might be said that the need, or desire, to know "absolute truth" is itself a product (and a very telling one) of a particular, and peculiar, worldview. Certainly since the Scientific Revolution and the swing from a value-laden to a value-free method of acquiring knowledge, the West has witnessed a shift in emphasis from **why** things work the way they do, to **how** things work they way they do in the universe. To use the imagery of religion: having been dissatisfied with a communion in God's ways, we have aspired to knowing the universe from "His" perspective. In regard to the relativity of "reality," I am claiming that if an intangible truth does exist in any kind of absolute form, by means of which we might circumvent the relativity of our constructed reality so as to discover a common bond which links all such human constructed realities together, it is to be found within the human body and in our relationship to the continuum of Nature. This is a qualitative truth, and as such it stands in direct contradistinction to the quantifiable truths of modern science and mass technocracy.[2] At the risk of appearing wildly speculative, the bond between humanity and the natural environment may be the fount of the spiritual impulse within us all. In this regard, Theodore Roszak has asked whether it is possible that the history of our Christian heritage is but the last flicker of what once was a divine fire which burned within each of us.[3] This flame of divinity, if kindled, is one of a highly attenuated sensibility and can be properly referred to as visionary and sacred. The secularization of consciousness, then, is a political issue, in the widest sense of the term. The repression of spiritual sensibilities in our culture over the last few centuries has been as necessary to the ideological demands of the artificial environment, as has been the accumulation of capital, factory discipline, class oppression, and physical exploitation. The dramatic rise of the artificial edifice, to the extent that it has been successful, has been paralleled by a diminishing intimacy between human and non-human forces.

I will endeavor to illustrate how the bond between humanity and the natural environment extends to the deepest recesses of the human psyche--which in this essay includes the body. By way of contrast, however, I would first like to trace, albeit roughly, the contoured outline of the mental boundaries from within which the artificial environment drew its greatest sustenance. This is the model of what is now called the Cartesian mode of consciousness, as formulated by Rene Descartes in the seventeenth century. Descartes' well-known dictum, "I think, therefore I am," postulated as the first principle of absolute certainty the existence of a thinking entity, whose very existence was established by its ability to think of itself as a being which thinks. All that could not be contained within the absolutely knowable limits of the thinking "I" thus became suspect. This deductive skepticism separated the "I" from the (assumed to be unthinking) world and, mysteriously enough, from the (also unthinking?) body.[4] The body, and the functions of the body, however, could be "perceived" by the detached "I." Once the body, like the rest of the world, becomes an object of perception, it could be understood through reasoned observation. Thinking, then, becomes the essence of Cartesian humanity, while Nature, because it appears as external to the thinking being, can only be approached and known with confidence through the thinker's application of reason. Even reason becomes a matter of applied

mechanics, insofar as the phenomena of perception confronting the thinking being is considered external and somewhat mechanistic. The world is now a dead world, an expansive repository of resources available to Man, if he can but develop the means to plunder and manage such wealth. The extent to which these means are developed, without regard for the living and organic relationship between humanity and Nature, is the extent to which the artificial environment begins its momentous ascendancy in the "modern world." Having been epistemelogically cut-off from the natural world and from the body, and having suffered the loosening of the insoluble ties binding humankind to the environment, humanity begins its marked descent into the despairing state of alienation.[5]

The tendency toward a mind/body, subject/object dichotomy did not originate with Descartes, as if the power of his philosophical formulations were sufficient to bring about the transformation of Western consciousness. Descartes only provided the philosophical expression, or justification, for the broader shifting of perspectives which were then occurring in Europe. Nor were these shifts in perspective immediately felt everywhere. What is certain, however, is that the epistemelogical shift outlined above, along with the new socio-economic changes created in the wake of capital accumulation, gave rise to a climate in which mastery over Nature (including the body) could--and seemingly should--flourish. As previously mentioned, the repression of spiritual sensibilities (as understood by deep harmonious ties to the continuum of Nature) in Western culture, over the last few centuries, has been as necessary an adjunct to the creation of the artificial environment as has factory discipline, class oppression and physical exploitation. Thus, the nurturing of a sacred, or communal, relation with the Earth becomes increasingly difficult and is granted less validity as "man" masters more and more laws of Nature and proves able to harness the powers of the Universe through rational management and manipulation.

It is my contention that the further loosening of our ties to Nature, and the intensification of alienation within the social world, reinforce and perpetuate each other. The distance which humankind introduces into its relationships with the natural world eventually dislodges us from our place in the holistic continuum of the Cosmos. The insoluble character of the bond which humanity and the Cosmos have shared in times long past is illustrated in many creation myths.[6] Versions of a creation myth shared by several groups of North American Indians (and versions of which were also existent throughout Eurasia) held that the Earth was created from a dead giant, man or woman. The skull is made into the sky, the bones become the stones, the hair becomes the vegetation, the blood becomes the water, etc. It should not escape notice that this process of creation is reversed in the biblical creation of man, whereby Adam is formed from the clay of the Earth. Arcadian and Athenian stories tell of how man emerged from "Mother Earth," while other Greek myths relate how humanity was derived from trees or woods. Similarly, the Norse myth of Ymir explained the first man and woman as originating from two trees (an ash and an elm), which were rooted by a sea created from Ymir's blood. Mythology in our own day has been largely discounted as the erroneous formulations of immature social groups. The term "primitivism" is usually applied to groups or conditions which do not embody the characteristics or qualities designated by the term "civilization" with all of its connotations. Belief in and adherence to a linear conception of progress has created the opinion or attitude that so-called "primitive" groups are inferior to our own, as opposed to simply being different. Although different from our own, we still share the common bond to the natural environment, which may, I believe, be regarded as a shared biological trait. As a proverbial turn of the tables, it might be said that the measure by which we today have become alienated from that sense of immediacy with the Earth which "primitives" enjoyed--and still enjoy in some areas--is the measure by which we ourselves have fallen into a different kind of primitivism.

It is not only in the mythologies of times long past that vibrant insight regarding our place in the continuum of Nature manifests itself. We continue to be overcome by such insight today, even though the tendency for this is less prevalent than in the past. Because of the general repression and removal of socially accepted channels for enhancing our biological contact with the Earth, any insight we do have into our human/environmental continuum is likely to be dramatic and gripping, and usually sudden or unexpected--a seeing of the light, so to speak. I have two examples to offer as illustrative of what this vibrant insight into the human-Nature continuum is like in experiential terms. One is in the form of an excerpt from Peter Matthiessen's **The Snow Leopard**, the other is a personal one, and it is from a dream I had some time ago. **The Snow Leopard**, written in diary form, is Peter Matthiessen's autobiographical account of an expedition to the Tibetan Plateau, which turned into a spiritual/psychical odyssey. While trekking with George Schaller across the mountainous terrain of Nepal and Tibet in search of the rare Snow leopard, Matthiessen begins to lose himself as each step moves him further from the coded boundaries of his own culture. In "shedding" the coding of his own culture (the artificial environment which he left behind) Matthiessen rediscovers himself anew, reflected as in a mirror in the Himalayan earth and air:

> The ground whirls with its own energy, not in an alarming way but in slow spiral, and at these altitudes, in this vast space and silence, that energy pours through me, joining my body with the sun until small silver breaths of cold, clear air, no longer mine, are lost in the mineral breathing of the mountain.[7]

I do not hesitate to place this excerpt within the scope of the present essay. Its contribution, though not quantifiable or subject to the detached observation of the scientist, strikes me as being appropriate and relevant to the discussion. The appropriateness of Matthiessen's experience is all the more so in light of the following account taken from my own dream-life. In his journey through the Himalayas Matthiessen discovers that the being of humanity is reflected in the natural environment. In my dream I also discovered, vividly, that the being of humanity is reflected in the natural environment. More specifically, the human unconscious may be, on some level, synonymous with the Earth.

Some time ago one of my closest friends, tragically, took his own life. About two weeks afterward, I dreamt that we were on our way to visit him. I was quite anxious to see him and was impatient when my wife wanted to stop to look at some plants. She sat on the ground handling a small plant; I was lying down on the ground next to her. (At this point in the dream I remained unaware of my friend's untimely death.) Despite my restless impatience to visit him, I was struck by the ambiguous nature of the plant my wife was examining. Was it alive, a weed, or was

it dead. I stirred uncomfortably. Agitated to no end, with patience long expired, I pushed myself up off the ground, determined to see my friend. But as I pushed myself off the ground, the crust of the Earth gave way and I suddenly found myself back on the ground, my arms having plunged into the earth below. Precisely at the moment when my arms broke through the Earth's crust, the suppressed knowledge of my friend's suicide vividly came to the surface of my consciousness. The surreal **feeling** of reaching into the Earth like that, and the sudden confrontation with the reality of my good friend's suicide, was startling--to say the least. In the same instant, I jerked my arm out of the Earth, withdrawing from that unconscious knowledge in a panic. I immediately awoke. The most startling revelation of the dream was of the Earth as my unconsciousness. The Earth's crust represented a dividing line between conscious and unconscious. Dipping into the Earth, or rather breaking through its surface (my impatience and agitation throughout the dream was the product of the struggle), had brought that suppressed unconscious knowledge into full, vivid consciousness. My interpretation of the dream is not based on any learned familiarity with dream symbolism. I knew the meaning of the dream in a way that required no interpretation. This was a knowing, in fact, which negated interpretation. The quality of this knowledge was of a sensual immediacy.

Dream analysis may seem to some to be an unreliable source, but in illustrating the organic character of our continuum relationship with Nature such experiential participation is of greater meaning than observations made from a position of distance. Still, I feel that one can **begin** to approach the concept of the physical environment as being an external mirror or expression of the psyche (mind-body), from a distance as well as from a participatory perspective. A cursory glance at the world around us will suggest that the visible abuse that we inflict upon the physical environment reflects the tendencies toward anxiety and alienation, which we subject ourselves to in the social world. We might expect that ecological crisis, manifested in the form of acid rain, the careless plundering and exploitation of resources, the destruction of the natural landscape, or the deterioration of the biosphere, would be found alongside human groups plagued by extravagant divorce rates reflecting the breakdown of intimacy in love relationships, a despairingly high suicide rate among youth who feel compelled to deal with life by ending their own, or by a "mass insecurity" which promotes the creation and deployment of nuclear arsenals capable of decimating the Earth and its inhabitants many times over. Ecology mirrors biology. In the light of such available evidence, if we can afford ourselves this term, one might at least be prompted to ask the question: What is the essential relationship between humanity and Nature?

I have treated at length the subject of human-Nature relationships, claiming that humanity's attachment to the Earth, indeed the Cosmos, is a symbiotic one. We remain attached to the Earth as if by an umbilical cord. I have also claimed that a heightened sensibility befitting a sacred relationship to it is cultivated when humanity becomes conscious of and engaged with the processes of Nature, and that the sacred potential of our relationship with Nature is comprised by what I have been referring to as the artificial environment. And it is precisely this aspect of the human experience, the technological aspect, that should not be neglected when considering the character of human-Nature relationships. Technology reflects and affects human consciousness. Any discussion of human consciousness which endeavors to weigh the influence of the natural world upon consciousness embodies implicit, if not explicit, references to technology. Just so, any discussion regarding the character of our technology must necessarily imply something about our mode of consciousness. This remains so insofar as technology maintains its (inherent) capacity to shape human consciousness and the natural world simultaneously. Technology will maintain this reflective ability, so long as human consciousness and the natural world remain part of the same continuum. In certain respects, technology is the mediation point through which the soft "buffer zone" we call culture is created as humanity makes its way through the natural world.

Of course, "technology," in this sense means something more than sophisticated tools or state-of-the-art machinery. Technology is woven directly into the socio-cultural tapestry which also includes values, beliefs, and perceptions of reality. Understood as such, we can more easily grasp the significance of Suzuki's discussion, when he addresses the question of a chair's essential being. As mentioned earlier, it is through the transformation of materials by human labor that the chair comes into physical existence. Technology (incorporating technical, organizational and cultural elements) is the process through which the transformation of materials by human labor occurs. If humanity is alienated from the natural world, technology, as the transformation of Nature, will reflect that alienation in its relation to human labor. The chair, consequently, will bear no essential relation to humanity or the continuum of Nature. Conversely, if humanity lives harmoniously and consciously within the continuum of Nature, technology, as the transformation of Nature, will reflect this harmony, and the chair subsequently embodies a living essence by virtue of its place within the continuum of Nature. The chair truly becomes the fruit of human labor. There is, then, some truth in the common axiom that technology is an extension of the human being. The character of this extension, however, reflects and affects the character of our relations to the natural world. Hence, the praise which greets new developments in artificial intelligence and the replacement of human beings in industry by automation or robotics reveals something about our integration (or disintegration) within Nature's continuum. Finally, the disjunctive way in which we still perceive the "body" (as evidenced, e.g., by the use of anabolic steroids amongst athletes, to developments of artificial "intelligence"[8] and all else in-between) remains a means by which we can measure our Fall from Nature's grace. Alienation is disequilibrium, but all is not bleak, for there are alternative sunrises appearing on every horizon. It is in the spirit of optimism, then, that I close this essay as I opened it, with an excerpt from Theodore Roszak, which in the spirit of new beginnings, points to the wasteland's end.

> But now suppose this ability we have to find something of ourselves in people should be expanded, so that the same personal transaction occurred with animal and plant...
> Suppose that ability began to reach out further still, discovering a reality of inventive pattern and communicable vitality even in what we once regarded as the dense, dead stuff of the world...
> Suppose the whole of creation began to speak to us in the silent language of a deeply submerged kinship...
> Suppose, like the child, the "superstitious" savage, and the rhapsodic seer, we even felt urged to reply courteously to this address of the environment and to join in open conversation...

Suppose we discovered that the fallacy in the "pathetic fallacy" could be undone if, instead of reading human characteristics into nature, we realized that nature had read human characteristics into **us**...

Notes

1. The term is taken from Theodore Roszak, **Where the Wasteland Ends** (Garden City, New York: Anchor Books, 1973). My use of the term, however, may differ from Roszak's.
2. The dichotomy between the qualitative truth of the human- Nature continuum, and the quantifiable truths of objective, value-free science can be seen as ideological, but ideological in the broadest sense of the term. It is from this ideological dichotomy that the title of the present essay is derived.
3. Roszak, p. xv.
4. The history of the West, in this respect, appears as "the progressive removal of mind, or spirit, from phenomenal appearances"--or what Schiller called "the disgodding of nature." See Morris Berman, **The Reenchantment of the World** (Ithaca and London: Cornell University Press, 1981), particularly Chapter 3. The "Self" becomes an entity "inside" which observes the world which is "outside." In this light, it may prove fruitful to investigate the relationships between technology and ego-consciousness.
5. This descent into the despairing state of alienation would become increasingly pronounced once Europe would enter the throes of industrialization. The descent into human alienation mirrors the ascent of what I have called the artificial environment.
6. More complete accounts of the following myths can be found in the following: **Sacred Narrative**, ed. Alan Dundes (Berkeley: University of California Press, 1984), and in **Notes in Greek and Roman Mythology**, ed. Coles Editorial Board (Toronto: Coles Publishing Co. Ltd., 1982).
7. Peter Matthiessen, **The Snow Leopard** (Toronto: Bantam Books, 1978), p. 238.
8. One discussion of the role of the body in regard to perception and to developments in artificial intelligence can be found in Hubert L. Dreyfus, "The Role of the Body in Intelligent Behavior," in **Philosophy, Technology, and Human Affairs**, ed. Larry Hickman (Texas: IBIS Press of College Station, 1985), p. 179.

Additional bibliographic information:

The content of the present essay derives largely from experience and reflection, as opposed to a wealth of academic sources. Theodore Roszak's **Where the Wasteland Ends** served as a kind of focal point in some ways, and the essay proceeds in part from reflections upon aspects of Roszak's work which I (usually) recorded in a journal in free-form fashion, to be developed later. Some sources which have made, at least, an indirect impression upon the present essay or my thinking on the subject include:

Theodore Roszak, **Where the Wasteland Ends** (Garden City, New York: Anchor Books, 1973).

Owen Barfield, **Saving the Appearances** (New York: Harcourt Brace Janovich).

Morris Berman, **The Reenchantment of the World** (Ithaca: Cornell University Press, 1981).

Peter Matthiessen, **The Snow Leopard** (New York: Bantam Books, 1978).

Gregory Bateson, **Steps to an Ecology of Mind** (London: Paladin, 1973).

I also note the influence of recordings by Sun Ra and the Solar- Myth Arkestra, particularly "My Brother the Wind."

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FOCUS ON SENSE OF PLACE

ENVIRONMENTAL AWARENESS IN THE JOURNALS OF LEWIS AND CLARK

Richard F. Fleck

Students of environmental education would do well to examine the **Journals of Lewis and Clark**. Though the greater portion of the **Journals** consist of the pragmatic details of the exploratory expedition (1804-1806) itself, there is a significant number of passages portraying their gradual understanding of the rugged wilderness of the American West. As to be expected, their early impressions are rather superficial, but the deeper the expedition goes into the interior of the Plains and Rockies, the more intricate they become. Some notion of nineteenth-century concepts of the wilderness should be pointed out. Roderick Nash, in **Wilderness and the American Mind**, contends that Puritan conceptions of the wilderness as a place of darkness and distress where evil abounds continued into the nineteenth century.[1] But other more recent concepts of wild Nature also formed part of the fabric of nineteenth-century thought. The Scottish Rhetoricians (Hugh Blair, Henry Kames, and David Hume) developed, in the mid- eighteenth century, the philosophical notion of the sublime of which Thomas Jefferson and other intellectuals of the day were well aware.[2] A wild and sublime Nature elicits a sense of profound awe, and this awe elevates the soul of the viewer. By the time of the Lewis and Clark Expedition, the wilderness was considered to be a dangerous but awe-inspiring place rich in potential natural resources. With these conceptions in mind, let us turn to passages in the **Journal** which portray a gradual but steady environmental education.

The wilderness affected Lewis and Clark through two basic modes: landscapes and flora and fauna. The wild open prairies, thundering waterfalls, high, snowy Rockies as well as vast herds of buffalo and antelope and fierce wild bears inspired the explorers with a sense of awe a la Blair, Kames and Hume. At times

words of description seemed feeble and frail to these two Captains of President Jefferson's expedition.

Early in the **Journals** Clark describes a mound which he climbed above the Nemaha River to view their surrounding plains which "afforded one of the most pleasing prospects I ever beheld."[3] As a result of this, he takes it upon himself to climb many bluffs along the river. From another bluff, he records, "The most beautiful prospect of the river, up and down, and the country opposite, presented itself, which I ever beheld" (p. 41). William Clark seemed more attracted to Indian people than was Meriwether Lewis, probably because he was more of a social extrovert than was Lewis. As they made necessary contacts for purposes of fur trade with the various Plains Indian tribes, William Clark gained added insight into this wild, new country through native mythology which was so much a part of the land forms themselves. At Vermillion, he jotted down a myth concerning the devilish "little people" of Spirit Mount: "In the northerly direction from the mouth of this creek, in an immense plain, a high hill is situated, and appears of a conic form, and by the different nations of Indians [Mahas and Sioux] in this quarter, is supposed to be the residence of devils: that they are in human form with remarkable large heads, and about 18 inches high, that they are very watchful, and are armed with sharp arrows with which they can kill at a great distance. They are said to kill all persons so hardy as to attempt to approach the hill" (p. 51).[4] Though he does present a scientific explanation for the myth, Clark began to sense a certain mystique of the land through tribal legends and myths which he heard and recorded.

Farther upstream, Clark discovers that the rocks among the Mandan people were not just rocks but omens of the future. One large rock along the upper Missouri River is described by him as being twenty feet in circumference, thick and porous; it was known by the Mandans as a medicine stone because it informs them of everything which is to happen, and they visit it every spring and sometimes in the summer" (p. 119). After they offer it smoke and go to sleep nearby, they read its messages "raised on the stone" the next day. The magic and poetry of Indian myths began to take effect. Even Meriwether Lewis became somewhat Indianized when he refers to one particular white supply boat of theirs that escaped all harm as being "attended by some evil genius" (p. 154). And a bit later Lewis writes, "The towrope of the white pirogue--the only one, indeed, of hemp, and that on which we most depend--gave way today at a bad point. The pirogue swung and but slightly touched a rock, yet was very near oversetting. I fear her evil genius will play so many pranks with her that she will go to the bottom one of these days" (p. 157).

The effect of vast Western land seeps in to the **Journals** of these two early explorers. William Clark expresses his genuine sense of joy at seeing for the first time the distant, snowy Rockies. And his companion Lewis describes Yellowstone country as "beautiful in the extreme." But perhaps a sense of awe is aroused most fervently by the Great Falls of the Missouri River. Lewis all by himself far from any other human climbed to the top of some rocks to gain a fine view of the falls which robbed him of his capacity for words:

> After writing this imperfect descriptions, I again viewed the Falls, and was so much disgusted with the imperfect idea which is conveyed of the scene, that I determined to draw my pen across it and begin again, but then reflected that I could not perhaps succeed better than penning the first impressions of the mind. I wished for the pencil of Salvator Rosa, a Titan, or the pen of [James] Thomson, that I might be enabled to give the enlightened world some just idea of this truly magnificent and sublimely grand object which has, for the commencement of time, been concealed from the view of civilized man. But this was fruitless and vain. I most sincerely regretted that I had not brought a camera obscura with me, by assistance of which even I could have hoped to have done better, but alas, this was also out of my reach (pp, 177-178).

He goes on to say that these waterfalls gave him such pleasure and astonishment as he never experienced before; they were a veritable eye feast. Clark's sense of an awesome and sublime wilderness was stimulated or, should I say jolted, by an incredibly violent thunder and hail storm:

> The first shower was moderate, accompanied with a violent wind, the effects of which we did not feel. Soon after, a torrent of rain and hail fell, more violent than ever I saw before. The rain fell like one volley of water falling from the heavens and gave us time only to get out of the way of a torrent of water which was pouring down the hill into the river with immense force, tearing everything before it, taking with it large rocks and mud (p. 204).

The wildlife of the Great Plains and Rockies proved to be a source of continual delight and "astonishment" for Lewis and Clark. They saw hundreds of pelicans, wolves, elk, antelope (or goats as they sometimes called them), grizzly bears, and buffalo. The West began to be synonymous with vast and titanic. Clark describes his first view of an incredibly large herd of buffalo: "I ascended to the high country, and from this eminence I had a view of a greater number of buffalo than I had ever seen before at one time. I must have seen near 20,000 of those animals feeding on this plain" (p. 374). And another time he records waiting for a fully half hour for a herd to thunder across a stream. Meriwether Lewis devotes many a page of his journal to wildlife descriptions. Antelopes, coyotes, wolverines, rattlesnakes, and brown bears constantly divert his eyes from such practical matters as useful minerals, navigable river routes, and friendly versus unfriendly Indians. He takes time out to describe predator-prey relations of wolves and antelopes with the accuracy of a naturalist like John Muir or Aldo Leopold:

> Game is still very abundant. We can scarcely cast our eyes in any direction without perceiving deer, elk, buffalo, or antelopes. The quantity of wolves appears to increase in the same proportion. They generally hunt in parties of six, eight, or ten. They kill a great number of the antelopes at this season. The antelopes are yet meager, and the females are big with young. The wolves take them most generally in attempting to swim the river. In this manner, my dog caught one, drowned it, and brought it on shore. They are but clumsy swimmers, though on land, when in good order, they are extremely fleet and durable (p. 137).

Lewis, all by himself and far from help, almost became a victim of a predator-prey relationship when he encountered a rather large brown bear which followed him too closely:

> In this situation, I thought of retreating in a brisk walk as fast as he was advancing until I could reach a tree about 300 yards below me, but I had no sooner turned myself about but he pitched at me, open-mouthed and full speed. I ran about 80 yards and found he gained on me fast. I then ran into the water. The idea struck me to get into the water to such a depth that

> I could stand, and he would be obliged to swim, and that I could, in that situation, defend myself with my espontoon. (p. 184)

Fortunately, the bear turned around and left him standing all alone in waist-deep water. While the far West could be joyous and beautiful, it could also be fearfully realistic.

Meeting with the Shoshone people at the base of the Rocky Mountains, Lewis and Clark were given detailed information about the Columbia River country:

> The account they gave us was very unfavorable; that the river abounded in immense falls--one, particularly, much higher than the Falls of the Missouri, and at the place, the mountains closed so close that it was impracticable to pass, and that the ridge continued on each side of perpendicular cliffs impenetrable, and that no deer, elk, or any game was to be found in that country. Added to that, they informed us that there was no timber on the river sufficiently large to make small canoes. This information, if true, is alarming. I determined to go in advance and examine the country. (p. 245)

From the Columbia River Valley, Clark ascended a high bluff to be afforded a sublime view of distant Mount St. Helens: "From this place I discovered a high mountain of immense height, covered with snow. This must be one of the mountains laid down by Vancouver, as seen from the mouth of the Columbia River. From the course which it bears, which is west, I take it to be Mount St. Helens" (pp. 269-270).

At long last, on November 7, 1805, Clark records, "Great joy in camp. We are in view of the ocean, this great Pacific Ocean which we have been so long anxious to see, and the roaring or noise made by the waves breaking on the rocky shores (as I suppose) may be heard distinctly" (p. 277). Here they would spend a misty winter before returning to the high Rockies and the Great Plains to the east.

One can cull through the voluminous **Journals of Lewis and Clark** and find mixed in with their many pragmatic concerns other lengthy descriptions of an awe-inspiring North American wilderness. They acquired a strong sense of place through legends and myths, prairie panoramas, glistening Rockies, thundering waterfalls, monstrous thunderstorms, summer snow, and wildlife galore. Two years in these wild lands had a profound impact on their minds and spirits. While Lewis and Clark foreshadowed commercial and utilitarian interests in North American natural resources, they also foreshadowed a particular unique trend in American culture characterized by a yearning for all that is wild and untame.

Notes

1. Roderick Nash, **Wilderness and the American Mind** (New Haven: Yale University Press, 1973, revised edition), pp. 38-39.
2. See William Charvat, **The Origins of American Critical Thought** (Philadelphia: University of Pennsylvania Press, 1936), Chapter II, pp. 27-58.
3. Meriwether Lewis and William Clark, **The Journals of Lewis and Clark**, ed. John Bakeless (New York: The New American Library, 1964), p. 34. Further citations are from this edition.
4. Clark adds, "One evidence which the Indians give for believing this place to be the residence of some unusual spirits is that they frequently discover a large assemblage of birds about this mound. This is, in my opinion, a sufficient proof to produce...a confident belief of all the properties which they ascribe to it (pp. 53-54).

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TOWARD A THEORY OF SENSE OF PLACE

Robert Hay

Introduction

Studies in geography of people/place relationships were formerly done in an integrative manner through regional descriptions. However, descriptive accounts of regions have been out of vogue in geography for the past two decades, being left to the imaginations of regional novelists and travel writers. After regional geography came behavioural and economic investigations, such as studies on territoriality, environmental perceptions, geopolitics, and migration. These addressed people's **functional** relationships to place, and analyzed only **parts** of people's lives.

The focus on quantification and spatial dimensions showed an emphasis on science and people's position in **space**, not the subjective world of emotions and people's relationships with their **place** (Eyre, 1973). Whereas bonds to mate, family, kin, country, and work have been researched by other social scientists, peoples' **emotive** bonds to place, within their whole **lifeworlds**, have seldom been studied. This research situation tells us more about the biases of modern geographers than it does about people's real relationships to their places.

Behavioural methods, more akin to positivist philosophy than to empirical science, maintain a Cartesian dualism between scientist/object of study, mind/body, human being/Nature, and person/place (Berman, 1984). When these methods are applied in human geography, parts of a person's life are carefully extracted and analyzed in an abstract, objective fashion, later to be described in "value-free" terms in reports. It is no wonder that the results often bear little resemblance to the reality of a person's experiential world.

Yet this type of "science" is used to attempt to "explain" people's behaviour. Research on people's attachment to place has most often employed such methods (e.g. Ermuth, 1974; Eyles, 1985, Fried and Gleicher, 1961; Kasarda and Janowitz, 1974; Taylor and Townsend, 1976). Alas, accounts of dehumanized research "objects" do not contribute much to un-

derstanding people living in their place (Kates, 1978; Ley, 1981; Seamon, 1982, 1987; Smith, 1979). People's everyday "lifeworlds" are set in a localized place, which is infused with feelings, memories, and meanings too individualistic and personal to be researched using the generalizing, impersonal methods of reductive science. Such lifeworlds are collective, gestalt **wholes**; a holistic, empathetic, intuitive approach is also needed to understand more fully how people and place are related.

A few geographers have reconized the limitations of investigating people's lives through scientific, quantification alone. They realize that the objective world includes the researcher. They adopt a humanistic perspective, based on elements drawn from phenomenology, existentialism, humanism, and gestalt psychology. In some respects this approach has more in common with the arts and humanities than it does with social **science**. This is because humanisitic geographers want to get at the core and essence of the people/place relationship, its heart and soul, and its sense of place.

Methods that keep life as a whole unit are used, such as the in-depth, descriptive approach of ethnography, as well as the enquiring manner of phenomenology (see Hammersley and Atkinson, 1983; Pickles, 1985; Relph, 1985; Seamon, 1982, 1987). Phenomenology investigates how people constitute their personal realities. It does so by removing layers of abstraction between people and their immediately experienced lifeworlds. Intuition and reflection on the material derived from these methods become sources of insight. The researcher's mode of thought attempts to participate in the unique context of the research (**not** remaining distant or objective in an artificial manner), and, as a result, the effects of the researcher on the situation are considered.

The goals of humanistic/phenomenological studies normally include careful description of particular lifeworlds, understanding general patterns and universal structures based upon these descriptions (toward theory-building), as well as the personal growth of the researcher. Humanisitic geographers began research into lifeworlds and place by describing insider/outsider divisions, fields of care (networks of concern within a place), sacred space, home, homeland, habit fields (regular activities in a familiar place), place and placelessness (sterility of experience in place due to uniformity of design), geopiety (reverence for Nature), the taken-for-granted world of everyday experience, and sense of place (e.g. Buttimer, 1976; Ley, 1977; Porteous, 1976; Relph, 1976; Seamon, 1979, Shepard, 1967; Tuan, 1974a, 1974b, 1975, 1976a, 1976b, 1977, 1978).

More recent endeavors have often also used a phenomenological approach, which has focussed on home and horizons of reach (Buttimer, 1980; Tuan, 1986); artistic expressions of place (e.g. Lutwack, 1984; Pocock, 1981; Porteous, 1985a; Prince, 1984; Seamon, 1984); the nature of dwelling in place (Korosec-Serfaty, 1984; Norberg-Schultz, 1985; Seamon and Mugerauer, 1985); the sensual and emotional experience of place (Porteous, 1985b, 1986; Porteous and Mastin, 1985; Seamon, 1984); and interpretations of landscape experience (e.g. Cosgrove, 1984; Engle, 1983; Jackson, 1984; Nogue i Font, 1985; Violich, 1985). New perspectives on sense of place (Burgess, 1982; Datel and Dingemans, 1984; Eyles, 1985; Hay, 1986; Lewis, 1979; Rowles, 1983; Saarinen, Sell and Husband, 1982) have shown how this concept tends to unify the full range of humanistic and phenomenological research efforts in geography.

The initial movement in humanisitic geography up to 1976 was seen more as a reaction to the excesses of the quantitative revolution than as a positive research field on its own (Entrikin, 1976). In the later days of the movement (to the present), the use and definition of phenomenology was found to be untrue to its philosophy: Geographers had seen intentionality as **voluntaristic** (versus intentions as the **unreflective** holding of some object in consciousness); lifeworld and experiences were seen as research **objects**, instead of being used to **investigate** how experiences are **constituted** by people within their lifeworld; experiences were merely **described**, instead of providing opportunity for **reflection** on how they were constituted. The emphasis was on **individual's** experiences, instead of trying to find **universal** essences and general structures of experience. The research on the whole was too one-sided in its humanisitic, subjective anthropocentrism (Pickles, 1985).

Most humanistic research has been conducted using this limited approach. Fieldwork was rare and insights were gained through personal reflection, examinations of artists' works, and literature reviews. However, today some researchers are beginning to compensate for these deficiencies. Through such an enlarged research approach a basic theory of sense of place has begun to emerge (Hay, 1986).

Sense of Place: Toward a General Theory

Humanistic geographers have referred to sense of place (predominantly concerning modern peoples) as a personal connection with place, built-up over both years of residence and involvement in the community. Because it involves the everyday world, perspective is needed to "catch the sense" of one's own place, possibly through travels away (Tuan, 1974a, 1975). Recent articles in geography have described sense of place as operating within three interweaving dimenisions: The **perceptual realm** of awareness, attitudes and memories; the **emotional realm** of feelings preferences, and values; and the **experiential realm** of bodily and sensory contacts, insider/outsider, and journeys (e.g. Pickles, 1985; Relph, 1985; Seamon, 1987). It is an individually based, but group informed, localized, personal means of relating to the world, transforming mere space into a personal **place**.

One's "place" is the familiar region of habitual routine, where one feels comfortable and secure doing functional, repetitve tasks. Intimate local knowledge of the place is maintained through regular travels, while human contacts are renewed through family, community, leisure, and work involvements. Much of the sensing of place is subconscious because as the place becomes more familiar, the unique qualities that make it distinctive (to an outsider) are noticed less. The **type** of sense of place that a person develops is partially dependent on the human groupings one belongs to, the preferences one currently has, and the sum of one's life experiences (e.g. a person could be oriented to Christianity, outdoor recreation, and developing roots in a place; Eyles, 1985; Hay, 1986; Nogue i Font, 1985).

The region one feels bonded to is limited to that area which can become well-known through regular travels from a home base. This "action space" (Horton and Reynolds, 1969) is limited by topography, access routes, private property, and fear of the unknown (Tuan, 1980). Restrictions on the dynamic interplay between individuals and society in historical, place contexts (termed structuration) tend to limit people's actions and in-

fluence their attitudes (see Gregson, 1986). A less deterministic theory, structuralism, emphasizes the importance of human agency in creating structures and attitudes. Geographers have written of the "cultural landscape," the human imprint on the land (Sauer in Leighly, 1963), typifying behaviour within it: the grid of streets, suburbs, and shopping centers in a prairie town; isolated cabins along a stream in the mountains; the crowding of apartment dwellings in a downtown urban setting; and the open spaces of rolling farmland are all examples of types of environments that help shape people's behaviour and perceptions. Economists describe structural orientations in the economy that limit choices in lifestyle and vocation by providing only certain types of options in economic opportunities and training. Political scientists explain how the structure and goals of organizations, political parties, and typical work rhythms create expectations of "normal" patterns of behaviour and movement within society. Historians record the past settlement and actities in a place.

Together with people's feelings for their homeland, the aforementioned factors combine to form senses of place which mirror particular place settings and societies in certain eras of time. Sense of place would thus be quite different between New Yorkers in a neighbourhood of Manhattan, grain farmers on the Canadian prairies, and the inhabitants of a small fishing village in Iceland. In each of these places there is a range of variation among the human groups (and individuals) present, but, because a degree of homogeneity is obvious to an observant outsider, this range does not vary too markedly.

A mosaic of different types of people (who are similar in some ways) and different sub-regions (within a place) have therefore become fairly cohesive in one place. The regional consciousness of its inhabitants is apparent; their **genre de vie** (lifestyle) intertwines with the ecology and geography of the place (Vidal de la Blache in Buttimer, 1969). Beyond the regional realm, people may also be fairly homogeneous in their sense of place within a nation-state. Thus, Canadians appear to differ less amongst each other (e.g. between French and English cultural groups) than they do from New Zealanders or Chinese.

Within a place it appears that most people need to develop bonds to the place and to a group of like-minded inhabitants. Becoming an "insider" allows feelings of security and status to arise. It is natural for people to become "insiders looking inward." This is likely a carry-over from our tribal past as hunter-gatherers. We tend to repel strangers and accept those most like ourselves (Lofland, 1973; Tuan, 1986). Insiders have their own rituals, their own slang and dialect, and they dislike negative comments about their place or themselves by outsiders. However, they must also, even if grudgingly, accept some newcomers into their midst to stimulate them with new ideas and vitality, and to broaden their genepool. But, forming a **bond** to a place automatically seems to make that place the "best place" in one's mind. Negative attributes of the place are downplayed and rationalized away in comparison with other places, with ample agreement on the place's good points available from other insiders.

Bonds to place have been better expressed through the arts than in geographical research. Popular songs, such as "Homeward Bound" (Simon and Garfunkle), "Country Road" (John Denver), "In My Life" (The Beatles), and "My Hometown" (Bruce Springsteen), are modern examples from the music industry. The novel and television series **Roots**, by Alex Haley (1977), described North American black people's ancestral bonds to Africa. Motion pictures are, perhaps, the best means to depict an emotional attachment to place, combining visual scenes of personal commitment to place with the plot of a good story. A viewer is drawn into a world of intense, human drama for a short time, while empathizing with the actor's feelings. Recent movies which have used this medium well to powerfully convey the people/place relationship include, "The Trip to Bountiful" (1985), and "Places in the Heart" (1984).

My own research project on sense of place, in the Cowichan Valley of British Columbia, was written in academic jargon. And so, to convey residents' feelings for the Valley, excerpts from tape-recorded interviews were included. In a random sample of 65 adult, white, rural residents, I found that the preponderance of people liked and had a sense of place (91 percent; Hay, 1986). Here are four positive responses that are representative of this group:

> Well...I like the water and the streams and the timber and the mountains, all those things, and the rugged side of it is what I appreciate as much as anything. And the views in particular when you live on the Lake [Cowichan Lake], well, it's nice to wake-up in the morning and see.
>
> I do like blue sky. And the greenery...I really enjoy seeing green grass in December. And having lots of trees around. And the lack of built-up area. I enjoy being able to live in a country atmosphere. Half an acre as opposed to being in a subdivision, four feet away from your nearest neighbour.
>
> I like the countryside. I think it is fairly unspoiled. I like the clean area. I like the clean **air** too. I like the trees, and the mountains, and the sea. Rural areas and farmland; wildlife...I love wildlife. We've got so many birds and things right around here. I enjoy that. It's peaceful and it's quiet, and the pace is not too fast.
>
> Oh, the people here all seem to care about each other and they help each other a lot. You get to be friends with everybody and everybody knows you, even if you don't know them closely. but when you walk down the road and a person passes you in a car he'll wave, and then two minutes later he comes back again and he'll wave again. So you get to know everybody, eh? It's nice that way. (Hay, 1986)

Together with such descriptions of their sense of place, statisical analyses, which compared the relationships between attachments to place and a wide range of other variables, were added. A number of factors were isolated which indicate how strong bonds to place were developed. People ties, to friends and family, place ties, to special places, and length of residence were the most obvious. But awareness of one's place (as aided by exploration, travels away, living elsewhere, and perceptual sensitivity), involvement in the local community (including attendance at community events), and having reasons to remain in the place, all aided in the development of bonds to place.

Of course, relationships with place change throughout one's lifetime. For example, a child's place may be smaller and oriented toward security; a teenager's place may be oriented toward friends, entertainment and exploration; a middle-age person's place may revolve around work and family; and an elder's place might consist more of memories (Taylor and Townsend, 1976; Hay, 1986; Rowles, 1983; Tuan, 1977). Besides age, these relationships vary due to motive and length of

residence: People who move into a new place usually do so for **functional** reasons, i.e. for family and/or work related reasons, developing emotional bonds over the years.

People who are willing to leave a place are often those with weak social ties, with opportunities or social ties elsewhere, and/or with a history of past moves. Those who have skills that are in high demand, e.g. professionals and tradespeople, with a better income status, are more likely to move on. Nonetheless, people will often choose to remain in their place, despite hardhips such as natural disasters, wars, and economic depression (Taylor and Townsend, 1976). Their attachment to place may be all that they have left; so, they are willing to weather the hard times, and are optimistic about building a new future.

To many people, the importance of their place is only evident once they **leave** it. Homesickness is similar to other forms of depression: The sense of loss one feels after leaving a familiar place parallells one's feelings after the "break-up" of a relationship or the death of a loved one. An emotional bond has been broken; only after a period of grieving can a new bond be formed. However, leaving a place gives one a chance to start anew; old ways of being and problems can be left behind. A new place is mysterious; there is a sense of adventure along with feelings of displacement.

From my own past experience, it is the **general** way of life that is missed after a move, with special places and people representing that way of life. If one returns home in a few years, the special places and people would be much the same, as would the way of life; after many years, the special places and people could have changed a great deal or vanished, and the way of life might be found only in history books. And so, we are in part the product of places at particular periods, and after a long absence, we really cannot "go home again."

Both a **sensing** element, affected by perceptual, spatial, and structural constraints, and a **bonding** element, involving emotions, motives, insider traits, and taken-for-grantedness, come together to form a sense of place. The effect on people who have developed a strong sense of place is most apparent to an outsider. The people appear secure, rooted, at ease, territorial, and full of self-confidence. Their sense of belonging, satisfaction, and familiarity with their place shows; the benefits of living a whole, **contextual** life are evident in their easy manner. Their place is a "given". They concern themselves with their work, families, and leisure pursuits instead. "Place" to them is merely the locus where their lives "take place."

In reflecting on my own field studies, it has become apparent that sense of place is part of a larger system of human endeavor. Just as we take our **place** for granted, we also tend to take our health, mate, and short length of life for granted. Thus, cultivating a more conscious **sense** of place is akin to being **sensitive**, both toward the taken-for-granted realms and toward such contemporary issues as male-female relations, environmental quality, and racial/cultural equlity. How we typically view our place can be brought out by the exercise proposed by poet Gary Snyder:

> Ask yourself, how would you tell people where you live so that they could find your house without mentioning a street name, a road name, a town, a county, or a state. When you've figured out how to descirbe where you live, you've made the first step in bioregional awareness. You see the place you live, city or country, with fresh eyes for a moment...(in Dardick, p. 73).

It seems likely that sense of place may be more important to a person at certain stages of life, perhaps when needing security (as a child or during moves), identity (as a teenager), or memories (as an elder). Being "sensitive" therefore may be a function of age and need. Without sensitivity, however, the "everyday" world of habit is difficult to penetrate. **Perspective** is needed to become more aware, to (at times) break free of the dulling effect of repeated experiences. **Travels away** can refresh the psyche with new sights, while reminding one of the characteristics of home; **crises** in one's place may renew feelings of territoriality, through war, natural disasters, social movements, or large-scale economic development; the **insights** of artists or travelling outsiders about one's place may shake one awake; and higher **education**, contact with other **cultures**, or understanding the viewpoints of other **philosophies** and **religions** may bring new awareness. In ways such as these a person can gain a deeper appreciation for his or her ordinary place.

Some places, however, may be more distinctive and appealing than others, due to biological/economic needs and genetic predisposition (e.g. biotype preference for particular types of landscapes, Sommer, 1978), and cultural perceptions (i.e. learned biases). Hence, the allure of certain places for which one tends to develop a stronger sense of place (Lewis, 1979), while other places remain somewhat "placeless" (Relph, 1976).

Where placelessness abounds, a person may want to "escape," for a variety of reasons (Murton, 1979). North Americans have a history of mobility, and are seemingly unwilling to put down "roots" (Lewis, 1979; Weil, 1952); many of our places have a bland, uniformity of design which may not evoke a strong sense of place (Lewis, 1979; Lowenthal, 1968; Porteous, 1978; Relph, 1976). A strong sense of place, however, need not always be a positive thing. Lewis (1979) and Tuan (1980) describe the territoriality and violence of street gangs to make this point. Long residence in a place and a high position in the pecking order may also serve to oppress others, while change is resisted for personal advantage. Differences in social classes or racial background often cause the segregation of people in places, both in housing and the workplace (Johnston, 1987).

And so, starting off in a **new** place can be desireable to establish one's **own** place. In many human migrations, "moving out" was not just a part of the ritual of gaining maturity, of leaving the known world of one's family, home and place. It was an essential and difficult step to take to obtain freedom from oppression. North America was settled by many who were tired of being told what to do and "put in their place" (Lewis, 1979).

Languages reflect their place setting: the mode and speed of conversation, the descriptive words used, and the underlying values inherent in our conversations, all reflect particular places. A person's **physiology** is adapted to the climate and foodstuffs of one place. How a landscape is **viewed** (and used) is apparent in a culture's art, myths, rituals, religion, and architecture (Tuan, 1974b, 1975, 1977).

The portability of one's perceptions and response to place is shown by the typical behaviour of new immigrants. They try to make their new surroundings resemble their homeland, shaping the physical landscape and the built environment: English settlers in New Zealand removed the forest cover to provide pastureland for millions of sheep; "Chinatowns" are a feature of cities worldwide. One's place thus travels as part of oneself.

Both the physical aspects of one's place and the cultural ways associated with it seem to rub-off on an inhabitant. Mere association with a place over a long time has a powerful effect. The culture creates a norm, while the place creates a habitat. After a while, the person indeed becomes part of a place. The sense of place that results is evident to an outsider. Without some type of perspective, however, one's own sense of place might go largely unnoticed.

Conclusions

Our sense of place builds gradually. We eventually become a native in our place:

> A native is a man or creature or place indigenous to a limited geographical area--a space boundaried and defined by mountains, rivers or coastline (not by latitudes, longitudes or state and county lines), with its own peculiar mixture of weeds, trees, bugs, birds, flowers, streams, hills, rocks and critters (including people), its own nuances of rain, wind and seasonal change. Native intelligence develops through an upspoken or soft- spoken relationship with these interwoven things: it evolves as the native involves himself in his region. A non-native awakes in the morning in a body in a bed in a room in a building on a street in a county in a state in a nation. A native awakes in the center of a little cosmos--or a big one, if his intelligence is vast--and he wears this cosmos like a robe, senses the barely perceptible shiftings, migrations, moods and machinations of its creatures, its growing green things, its earth and sky. (Duncan, 1983, pp. 53-54.)

Selectively scanning a place, a native picks out the few parts that have distinctive features and are important in some way. Only some items are remembered; certain special places then become symbolic of these memories. Meanwhile, new events that differ from the normal pattern of life are noticed and remembered.

Over time, nostalgia recalls a few worthy nuggets from this body of memories. After a long time in one locale, the typical sights, smells and sounds, the years spent with friends and family, form a gestalt that is difficult to penetrate. Life is meaningful because of the complex association with one place. The daily patterns of life that followed a regular routine have come to be identified with the place. The place itself has become a vital part of the native's self. The natives in a place relate to the environmet through all of the senses at once, feeling and experiencing the lifeworld, place and self as a whole unity (Abram, 1985).

This collage of memories and meanings perceived over time forms a gestalt, a whole, that represents one's life in a place. A sense of place helps to order that whole, giving one a locus, a place from which to feel the Earth and be connected to it. Through years of residence, a sense of place provides a centre of continuity. From a strong center, where one feels at home as an insider and member of a community, a person can face the unknowns of the larger world beyond. With an awareness of one's place in the grand scheme of Nature, region, community and family, one can find personal meaning through both context and direction. Developing a sense of place aids in this process of community and self identification. It involves an extension of self and promotes the creation and perpetuation of culture.

Partially because of the ordinary nature of sense of place, it has received little attention from geographers (Saarinen, 1986). Also, most geographers are unfamiliar with the concepts and methods of phenomenology and ethnography (Walmsley and Lewis, 1984; Pickles, 1985). These days they are usually trained in specialities, not in a holistic approach to people's lifeworlds. Sense of place is not considered to be a worthy research topic; it is merely an interesting concept. But, if the methods of phenomenology and ethnography are applied properly, there are research frontiers that challenge us to an ecological understanding of place. As Eluard has said, "there is another world, but it is in this one" (in Berman, 1984, p. 147).

How place experience is constituted in everyday life, especially the assumptions in modern people's thought (which tend to distance them from their place) is largely unknown; how gaining perspective on one's place adds to the development of a conscious sense of place is unknown as well. The effects of both place and society (or social groups) on the formation of people's sense of place needs more attention. How much a sense of place differs with respect to physical landscapes, age, gender, group affiliations, rural or urban situation, and culture, needs further study. Cross-cultural research could show how similar or different whole societies are in their sense of place. Contrasts between hunter-gatherer/horticultural and modern societies are especially in need of exploration to see how sense of place changed through changes in technology. Once such studies are done, it might be possible to develop refined applications for place learning, design, and preservation. The significance of sense of place will then be known in modern society: it will play a more important role in resolving environmental and social conflicts. Focus on sense of place could also help us to integrate the disparate specialities of modern geography, joining physical and human fields, objective and subjective information, through a new awareness of the importance of the reciprocal relations within the context of place.

And so, through additional research, a realization of the importance of sense of place might arise. Some geographers and artists could then see the need to take a larger role in helping to create a new sensitivity to the world amongst people, enabling them to develop a much more meaningful, personal relationship with their place. Perhaps then people will not be willing to live within taken-for-granted, placelessness, instead moving towards enriched lifestyles in small communities, and in harmony with natural ecosystem processes. For modern society, it appears that a movement toward such wisdom can come none too soon.

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THE ETERNAL VISION

Steve Slavik

> The visionary has two kinds of vision, one eternal and invisible, and the other transitory and visible.
> Transitory vision is well-known to us, since we know some people are blind and others are not. If eternal vision were the only one in existence, all people would be visionary. But the vision of the visionary is an eternal one: Scripture says "The vision of the Witness can never be lost." We also know this from experience, since even a blind man has vision of objects in dreams. This shows that the vision of the Visionary is not lost with the loss of transitory vision.
> Through the unfailing eternal vision, which is identical with Self, and which is called the Self-Effulgent Light, the Self always Witnesses the transitory vision in the dream and waking states, or idea and perception, respectively, and becomes the Seer of Sight. The vision itself is the nature of Self, like the heat of fire, and there is no other Witness over and above the vision.
> Sankaracharya, **Commentary to Brihadaranyaka Upanishad**, I.iv.10.

Living on the Edge of the Forest: A Vision

I live on the edge of a great forest called the world. I do not live **outside and apart** from the forest: I live **in relationship** to the forest, on its edge. The forest is dark and windy, mysterious, full of unknown friends and known enemies, full of wolves and bears, lakes, mountains, and, finally, the trees who are blown in the winds and who populate the track. From the great forest I obtain my living and my life.

I am not a forest creature but I live in essential relationship to the wild. If I do not live on the edge of the forest I die. My place is on the edge. Bears and wolves may travel far away from the forest in the safety of the night, but they are forest creatures. I may travel into the forest in the safety of the day, but I am an edge creature. If I move into the plain, I cannot live. I **need** to hear the wind in the trees, to imagine (and imagine only) the solitary life of the charcoal burner or woodcutter, to wonder where the wolves go or tell stories of what happens in the meadows when dusk falls. I do not live there; I live on the edge with others of my kind who know the tensions of desire and of impulse, of the wild, of knowing that a wolf who starves is a brother. I live with others who know that lost in the woods is not a threat but a fantasy. Not a threat but a longed-for fantasy of paradise. And who know about the wolves. I live with people who recognize the wolves on the plain who do not know themselves.

There is a great forest. I see it everywhere. I see a great unknown all around me. I see one within. I balance on the edge of these two forests where everything grows wildly. I maintain my balance in a delicate dance, side-step, and pace. To move into the forest of disorder, to know how small is the place of order--well, I do know. The temptation is strong, but I do not live there. The temptation is strong, the relief from order welcomed. If I move into the forest there is peace. I cry for the peace: I cry in the peace. This is the message of the **Great Teaching of the Forest** (Brihadaranyaka Upanishad): in the forest there is peace. In the devouring wolf there is peace. Submit to the wilderness and there is peace.

God. I love. I love the disorderly way the world moves, the way the forest grows. You make a path the best way you can. The trees and the boulders which block your way become beautiful. They are not obstacles: they are the way the moss-covered world moves. Everything is overgrown; covered with brush; light thrusts down here and not here; the trees twist upward to the light; the boulders sit and are covered with moss; deer peek; the wolves grow hungry and are satisfied. Lord Siva, I love the unruly, the destitute, the hungry, the wild wind, the peace that can come only to the totally lost, to the totally given over. The name of my Lord is Disorder--my worship is finding the way, of learning today's path, of seeing the results of last night's storm.

There is a small, crooked footpath leading into the woods and it changes daily, is beset with predators, accompanied by friends. If I can enter into the disorder, if I enter into the Wild--tomorrow I find another crooked path, leading only into the woods, or further into the woods, and in the distance I see the shining, I see the Angel beckoning. She does not fade; I get closer. But during the night I return home, on the edge of the forest, and I dream.

In my left lung grows a cedar forest, its roots gnarl themselves through my intestines. The forest grows up in the hollow of my left lung where I live. The trees grow erect and tall, and grow up into my throat and out my mouth, green and filamentous. The forest wants to talk through me, wants to talk, wants to express the ocean of movement and love through my mouth and grow wildly, rooted tightly into my intestines. I feel my spine thicken like a trunk and branches thrust themselves out of my shoulders and along my arms, my fingers split and thrust needles; I feel myself become erect, a tall cedar in the ocean of cedars around me.

I am gently swaying in the wind, looking out over the tops of the ocean of trees which is world, the stars above my head bright and clear, bright and clear, and I yearn--at the same time my roots are washed by a cold stream among the rocks. The cold is a delight and I can feel the water entering my roots and driving up my trunk, along my branches and into my fingers where I feel it leave my fingers and fling itself at the stars. Behind me are the ancient trees even taller and older than myself--behind me like a dark cloud in the night, banked up, and they oversee us and imagine they hold council about their satisfaction with the forest and about their satisfaction with world; I am comforted and I too look over the forest, dark and moving under the wind like a sea in motion, with satisfaction. And I feel great compassion for myself, for my fathers, for the children, for the wolves who have their life below. I listen. I hear the howling. It is there to be heard.

And I know our place in world, I know my part in world, erect in the forest, my arms high and striving for the stars, and as world turns the stars move, I feel world turning beneath me, I feel myself attached to the rocks. The forest stretches on forever and throughout time, turning beneath the stars. I am here.

All this happened in my left lung, where the spirit lives.

Accept Love: Have Peace.

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BOOKS: CRITICAL NOTICE

HUMAN EXISTENCE, TECHNOLOGY, AND ECOPOETICS: A COMMENTARY ON THE PHENOMENOLOGICAL EXCURSIONS OF IHDE AND KOHAK*

Hwa Yol Jung

> We all stand together, not only all men, but all things. To abandon things, and to abandon each other, is to be lost.
> Henry G. Bugbee, Jr., **The Inward Morning**

Our age is the age of autonomous and high technology whose spirit is embodied in the slogans of computer technology, media technology, and cybernetics. In essence, it is the age in which we ourselves become **manipulanda** and "we enter into a cultural regimen where there is neither truth nor falsity concerning man and history, into a sleep, or a nightmare, from which there is no awakening" (Maurice Merleau-Ponty, **The Primacy of Perception**, p. 160).

Within the movement of phenomenology, Martin Heidegger is the exemplary philosopher of technology. His seminal work "The Question Concerning Technology" (**Die Frage nach der Technik**) first published in 1954 has just begun to bear its intellectual fruit in the United States in recent years: There have been interpretative as well as expository works by such authors as William Barrett, Edward Goodwin Ballard, and John Loscerbo.

Two recent books that deserve special notice in this context are Ihde's **Existential Technics** and Kohak's **The Embers and the Stars.**

Ihde's **Existential Technics** is a collection of ten essays most of which had already been published elsewhere. It is difficult to summarize because it is a compendium of the topics which represent his significant contributions to the literature of phenomenology. The work is divided into three parts: 1. "technics" with four essays, 2. "perception" with three essays, and 3. "interpretation" with three essays.

Part Two represents a summary of Ihde's most original contributions to phenomenology in the tradition of Merleau-Ponty on the topics of the sociability of the senses as nascent **logoi.** Ihde's contribution adds "auditory phenomenology" to the phenomenology of perception. Judging from the one who is interested in the methodological implications of phenomenology to cross-cultural studies, the essay "Intercultural Perception" lays anew an important basis for intercultural communication, as perception itself is already nascent communication.

Part Three deals with old and new polemical issues within the phenomenological movement. The first essay argues the unity of Husserlian phenomenology and Heidegger's later thought, for "at bottom the two phenomenologies are one. They call for the most radical descriptive reclamation of experience in the twentieth century" (Ihde, p. 136). The setting of the second essay will be familiar to many readers of Ihde's interpretive work on Paul Ricoeur's hermeneutic phenomenology. It moves from Husserl and Heidegger to Ricoeur and then maps out the new vectors of phenomenolgical interpretation into cinema, television, tape recording, etc. The last essay on phenomenology and deconstruction follows the latest mode of philosophizing which stems in part from Heidegger's later thought that "deconstructs" the logocentrism of Western metaphysics since Plato. All and all, Ihde's interpretive essays here and elsewhere play the role of peace-making within the phenomenological movement. His keen sense of continuity from Husserl to Heidegger and from Heidegger to Jacque Derrida keeps the phenomenological movement **moving** without disintegrating or being fragmented into a cluster of sectarian satellites.

Part one of **Existential Technics** is a continuation and extension of Ihde's earlier reflection on the philosophy of technology--especially in **Technics and Praxis** (1979) which proposed and explored the question of, **inter alia**, technology **Technik**) as pivotal to Heidegger's thought. For Ihde, "Martin Heidegger is

perhaps the philosopher who has most originally and profoundly rendered the question of technology a central concern of philosophy" (Ihde, p. 29). The reason why we ought to pay serious attention to technology is quite obvious: technology "supplies the dominant basis for an understanding booth of the world and of ourselves" (Ihde, p. 10) and it is "perhaps the most basic thing about the very way in which we see the world" (Ihde, p. 44). Ihde's own philosophy of technology takes a hint from Heidegger who, in opposition to the tradition conception of technology as "instrumental" and "anthropologic," affirms its **ontological** character. Technology is a fundamental way of **disclosing** (in the sense of the Greek **aletheia**) the modes of Being and its truth. This is the true meaning of Heidegger's famous saying that the essence (Wessen) of technology is **not** technological.

Ihde is at his best in **describing** "existential technics" or the human experience of technology, but he falls short of prescribing what to do with what Heidegger calls the "technologizing frenzy," although, more recently, he has begun to recognize the focus on our moral **dilemma** of technology or technological civilization as irreversible and Frankensteinian. It is true that for Heidegger technology is revelatory of the truth of Being; it is no less true, however, that ontology implies moral agenda. Now we must come to terms with thinking the unthinkable--thinking about the "nuclear winter" or necropolis as the ultimate **karma** of modern technology: as invoked in the ancient saying of a Hindu sacred scripture, "I am my own death." Central to Heidegger's thought is the deconstruction of technology--in the exact sense of the term **deconstruction** as he himself defines it--that is, as "a critical process in which the traditional concepts, which at first must necessarily be employed, are de-constructed down to the sources from which they were drawn:" (**The Basic Problems of Phenomenology**, p. 23). The idea of "sources" is not merely historical but of cultural or moral genesis as well. The deconstruction of technology would be incomplete but for the resolution of its moral agenda. For technology is a cultural artifact hammered out of the wilderness of Nature or an extension of man in interaction with Nature. It, no less than science, is no longer a morally neutral instrument but belongs to man's total system of beliefs, values, and actions. The problem of Nature and that of technology, which mediates and transforms the relationship between man and Nature, are indeed the problem of human life itself. However, we should not be misled into believing that moral thinking and moralizing (e.g., the indiscriminate condemnation of all technology as merely negative) are identical.

While the purpose of Ihde's "existential technics" is to understand the transforming role of technology as mediation between man and the world (man ---- technology ---- world), Kohak's **The Embers and the Stars** is concerned directly with the relationship between man and Nature (man ---- nature). Therefore, for the former ecological concern is marginal, whereas for the latter technological concern is marginal. Nonetheless, technology is their common origin.

The Embers and the Stars is a pensive reflection on five themes: **Theoria, physis, humanitas, skepsis,** and **credo** which should be seen not as conceptual condominiums but as a spacious suite. In the rich thicket of ideas in these themes, the following points are mentioned as essential summation. First, Husserl's phenomenological bracketing as a radical procedure of philosophy is "the necessary foundation of all conceptualization" both theoretical and practical (Kohak, p. 182). Second, the moral sense of Nature emerges from the conception of Nature not as an alien mass of inert matter, but as vital kin to the human mode of being. For, Heidegger would say, **homo** is rooted in **humus**. Third, the purpose of **humanitas** is to reclaim positively the humanity of men and women as moral subjects (i.e., persons) rather than to decry negatively their dehumanization in the modern world. However, confidence in **humanitas** is not and should not be arrogance, for it is tempered with **skepsis** that reveals the "dim" sides of human nature. Last, **credo** as an act of religious belief or faith is last but not final, that is, it is not proposed as a concluding dogma or formula. Rather, it suggests the possibility of phenomenology as ultimate wisdom.

The richness of Kohak's ideas in **The Embers and the Stars** cannot be detailed in this discussion. Nevertheless, one idea should be singled out. That is, it contains the ultimate **principia** of ecological ethics grounded in phenomenology **cum** the New Hampshire landscape. Indeed, Kohak is an Aldo Leopold of phenomenology. Reading this masterpiece in ecopoetics or ecophilosopy is a serene, gratifying experience. Edifying the sense of Heidegger's "repose" (**Gelassenheit**) in the flesh, **The Embers and the Stars** celebrates geopiety or the sacrament of peaceful coexistence among all beings and things on this "good earth." It kills historicism and naturalism with one phenomenological stone. Both historicism and naturalism are untenably one-sided because one exalts man at the expense of Nature, whereas the other ignores human specificity when it takes man merely as a part of Nature. With the rebuttal of historicism and naturalism, phenomenology launches a new beginning in human thinking--in the words of Kohak, "a revolution of hearts and minds" (Kohak, p. 214). Kohak makes no apology for accepting this "ontological difference" or human distinctiveness: "I cherish the millennia of **humanitas** whose heir I am" (Kohak, p. 122). He calls the humans "faithful stewards of the earth" (Kohak, p. 109). The phenomenology of Nature must, I think, be grounded in a cosmological principle of pluralism whose central pillar is harmony. For harmony is not the unitariness of the undifferentiated but a "gathering" or orchestration of the undifferentiated many--each is a unique "Thou" in its own way. This is the true meaning of earth as **oikos** or household whose intimate **circle** encompasses all beings and things. Kohak's quintessential message in **The Embers and the Stars** is clear and unequivocal: "To recover the moral sense of our humanity, we would need to recover **first** the moral sense of nature" (Kohak, p. 13, italics added). While geopiety precedes homopiety, somewhere between the two lies closely the moral sense of technology.

By way of concluding this discussion, I have a suggestion concerning the use of metaphors in **The Embers and the Stars**. Metaphor is, Kohak proposes, the vehicle of his philosophical inquiry, for he is not to argue, prove a point, or formulate a set of doctrines, but to evoke and share a vision. Metaphor is conceived as a special gift of language. "Metaphoric usage," Kohak stresses, "is appropriate to it [philosophy] because **reality is itself metaphoric**. It is the **sense**, not merely the fact or the theory, of being which constitutes its reality" (Kohak, p. 55). The very title of Kohak's book is metaphoric--two metaphors that designate the vast areas and boundaries of Nature or the Cosmos. However, there is a con/fusion or ambi/valence in the use of visual and auditory metaphors. Kohak often alludes to the virtue of "darkness" or "virgin darkness, unmarred by electric light"

(Kohak, pp. x): in the global city of our civilization, the high tension of powerlines have banished the night and abolished the dusk (Kohak, p. x, 33); "the night still comes to restore the soul, deep virgin darkness between the embers of the dying fire and the star-scattered vastness of the sky" (Kohak, p. 30). While the "daylight" stands for "the time of **techne**," the "night" stands for "the time of poetry" (**poiesis**); the "dusk" for "the time of philosophy." Ultimately, however, the goal of philosophical inquiry is, for Kohak, to evoke the "**clarity of vision**" as knowing itself is **seeing**. The metaphoric landscaping of **The Embers and the Stars** is sprinkled with a dialectic mixture of light and darkness in which the latter is weightier than the former in reclaiming the moral sense of both **physis** and **humanitas**. Therefore, auditory metaphors might convey the sense of "darkness" better than visual ones: the metaphoric "heart of darkness" is auditory rather than visual.

In **The Birth of Tragedy**, the youthful Nietzsche echoes the voice of the ancient Greek legendary musician. Orpheus, whose singing not only moves "a world of darkness" but also makes the whole of Nature dance in de/light: "Quite generally, only music, placed beside the world, can give us an idea of what is meant by the justification of the world as an aesthetic phenomenon." Beyond Nietzsche's formulation, the **principium** of auditory metaphors is evoked by Heidegger in his conception of man, language, thought, poetry, and the world in relation to Being as opposed to the modern age as the age of "world-picture" (**Weltbild**): "mood" (**Stimmung**) and "attunement" (**Bestimmtsein**). Mood is a basic way of "finding" ourselves in or "tuning" ourselves to the world, Nature, or the Cosmos (**Befindlichkeit**). "Mood," Heidegger writes, "is never merely a way of being determined in our inner being for ourselves. It is above all a way of being attuned, and letting ourselves be attuned, in this or that way in mood. Mood is precisely the basic way in which we are **outside** ourselves. But that is the way we are essentially and constantly" (**Nietzsche**, I: **The Will to Power as Art**, p. 99). In this respect, I wonder if the auditory metaphor **attunement** might not be better than the visual metaphor **seeing** to depict the role of poetry and philosophy in describing and prescribing the sense of kinship between **physis** and **humanitas**.

*N.B. This is a slightly revised form of the author's review of Don Ihde, **Existential Technics** (Albany, NY: State University of New York Press, 1983) and Erazim Kohak, **The Embers and the Stars: A Philosophical Inquiry into the Moral Sense of Nature** (Chicago: University of Chicago Press, 1984) which appeared in **Research in Phenomenology**, 15 (1985): 279-284. Reprinted here with the permission of **Research in Phenomenology** and the author. For an author's note on Hwa Yol Jung see his article, earlier in this issue.

POETRY

SOUNDING I

Step Child

Whale singers dive
Bird singers soar
We have stopped
And mind the store

SOUNDING II

Step Child

Before propellers cut the seas
One fin whale could greet another
Across a thousand miles
Rumbling good morning
Thundering good night
At 20 hertz from the heart

THE CRANES

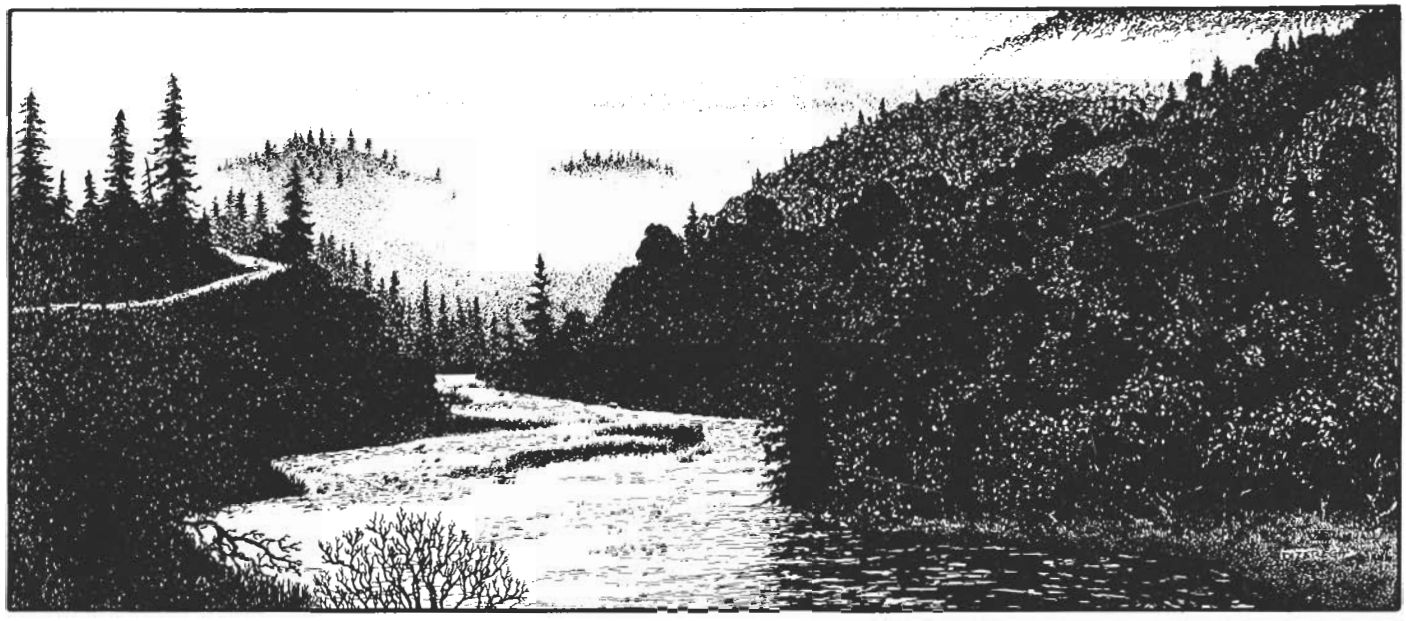
Step Child

Now man must dance like a whooping crane
Do the courtship dance to change her brain
Dance the mother crane to ovulation
Hoping to save this rare crane nation

Theseus' band danced the cranes to perfection
Survived the bulls to win election
Once, before the Socratic divide
We let the animals decide

About the poet: **Step Child** professes American Studies at the State University of New York at Buffalo. He also edits **Echology**, A Green Annual of Theoretical and Applied Sociomusicology.

CONSULTING EDITORS



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