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UNDERCURRENTS

A JOURNAL OF CRITICAL ENVIRONMENTAL STUDIES

fragmenting author-ity
volume 5, spring 1993

UNDERCURRENTS BACKGROUND

UNDERCURRENTS is an independent non-profit journal dedicated to the publication of views and ideas which challenge Western ideas of nature. It was founded in 1988 by a group of graduate students who saw a need to create a forum for new and original papers concerning human relationships with nature.

UNDERCURRENTS publishes critical (and self-critical) discussions that examines our relationships with nature and that seek to breakdown the barriers of traditional interpretations of nature.

In keeping with the relationships that we wish to promote, *UNDERCURRENTS* is created annually using principles of non-hiearchical consensus in the editing and publishing process.

EDITORIAL POLICY

Submissions are encouraged from any field, provided that links are made to the natural world. Creativity, originality and a concern for social change are desirable in works submitted.

It is the wish of *UNDERCURRENTS* to present a vision of humans as part of nature, rather than apart from or "over" it. We are therefore seeking works that do not discuss nature or aspects of it solely as a resource, whether economic or aesthetic. We feel that other existing journals publish conventional approaches to planning , development, resource conservation, etc.

We request that articles be written in accessible language (meaning clear rather than cryptic or jargon-filled), and we may be forced to reject articles on the basis of writing style. Writers should avoid discriminatory terminology.

BIOGRAPHIES OF ARTISTS AND WRITERS

Since starting at the Faculty of Environmental Studies at York University **Gillian Austin** spends most of her time moving piles of scrap paper around her room. She would like to thank her Mother for nourishing her love of stories, language and poetry. She is the author of "Raspberry Canes" which appears on page 31.

If all has gone as planned, **Anne Bell** is a recent graduate of the Masters in Environmental Studies program at York University. When not in school, she likes to impersonate nature photographers. She is the author of "Heeding the Song Unseen" and the accompanying photo on page 39. Another photograph appears on page 30.

Tzeporah Berman is an ecofeminist activist who alternates between working to save Canada's temperate rainforests and participating in academia at York University in the Faculty of Environmental Studies. Her current research areas include: environmental thought, feminist epistemology and ecofeminist linguistic theory. She is the author of "Spirit Rising" and she painted the accompanying image on pages 40 and 41.

Rosemary Black is an Australian who received her B.A. (hons.) in English Language and Literature at Melbourne University. She has studied at the Toronto School of Theology and at York University in creative writing. She is a poet and a mother of three children. She wrote "Promontory" and "Flight" which appear on page 14.

Stephen Clarke is a Master of Environmental Studies student at York University. His interests are in permaculture, organic gardening and decision-making processes that effect eco-communities. His artwork appears on page 43.

Jerry Valen DeMarco is currently working on degrees in Environmental Studies and Law and can often be found near nature and occasionally takes photos of things that will not fly away. His photographs appear on pages 9, 15 and 34.

Deborah Freeman is a Masters in Environmental Studies student at York University. Alternative lives include canoeing, ceramics, a Bachelor of Fine Arts and working with the Wildlands League. Her photographs appear on pages 6, 14, 27, 29, and 31.

Ann Howatt-Krahn, a graduate of the Masters in Environmental Studies Program, is an anthropological conservator of material culture. Doctoral research in geography currently explores the imaging of lands in literature and art, with attention to archetypal images in historical and contemporary contexts. Her artwork is on the front cover.

Noa Lior is entering her second year of graduate studies at York's Faculty of Environmental Studies. She has a background in research and management consulting. Narrow focus has so far eluded her and she may be available to contribute to Undercurrents for some time to come. She is the author of "The Passage of Time" which appears on page 15.

Mary Pickering is in the Masters in Environmental Studies program at York University. She has a special interest in the media portrayals of nature. Her photograph appears on page 36.

Jen Saini (a.k.a. Buffie St. Joan) studies, cooks, composes, and makes lots of stuff. She lives in Toronto and has an awful lot of (hungry) friends; and she didn't write this short biography. Her artwork appears on pages 8, 12, 21, 33 and the back cover.

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Editorial

Hello!

Late twentieth century Euro-American culture has been marked by the unsettling of many of the familiar grids through which its powerfully stable notions of knowledge, subjectivity, identity, otherness, reality, politics and nature have been constituted. The static authority of such notions has been prised open. We are situated in a moment of intense fragmentation; a moment of possibility and a moment of increasing danger. The spaces opened by this fragmentation are ones that offer many promises. What such promises will generate remains in question.

Danger and possibility: these are key signs through which the articles collected in this issue of ***Undercurrents*** speak. As both a historical condition and a political practice, the effect of fragmenting promises the very possibility of contesting the static and totalizing conditions of what might be called *the discourse of author-ity.* It also promises new kinds of monsters.

As Jeff Culbert argues, one central feature of the discourse of author-ity has been how it has institutionalized, encoded, and universalized cognition, or what some might call logocentricism, as the *modus operandi* of Western culture. Our consumption with establishing immutable truth and knowledge has produced what Culbert calls "the tyranny of the thinker"--a hyper-cognitive, anthropocentric figure that closes off all other possible forms of human and inter-species relations for sake of stabilizing the discursive power of knowledge. This apparently immutable and deeply privileged position of human-as-knower has been a regressive ground for various strains of modernist projects, including elements of Green politics. For Culbert, the centrality and fixity of this figure is in serious need of displacement if any "fundamental re-evaluation of ourselves in the world" is to take place.

The discourse of author-ity has also been intimately bound-up with colonialism and the construction of the Other. As Donald Gordon's critical essay attempts to show, neo-colonial impositions of the North American rhetorics of preservation and conservation onto the landscapes of Africa has ultimately been the attempt to inscribe an ideological image of the North onto the South. Such practices belie the cultural specificity and diversity of the post-colonial "South". And as a result, they ignore both the degree to which nature is necessarily inclusive of humans and that in the contexts of the "South" such an inclusion is crucial to any kind of preservation or conservation practices and policies. As Gordon notes, such an acknowledgement of the specific contexts of the periphery "unnerves our political system" and along with it the authoritative canon of North American conservation.

The projection of certain ideological and cultural matrices onto the bodies of non-European others--human and nonhuman--have been crucial to the economy of desire produced by particular forms of ecotourism. Again the discourse of author-ity is mapped into another unstable configuration. Constance Russel's paper explores this economy of desire through a retelling of her own visit to an orangutan conservation project in Indonesia. Orangutans, as boundary creatures occupying the space between culture and nature, have become central figures in the imaginations and narratives of ecotourists. What such imaginings and narratives produce are sometimes startling, and perhaps dangerous, constructions of the nonhuman other.

In a related piece, Sara Kerr's bitterly ironic meanderings into the world of advertising show that such

projections onto the "other", can work in reverse ways as well, through the writing of sex and nature into women's bodies. Advertising, like the eco-tour, appeals to originary, naturalized, and thus authorative moments to consolidate its own system of meaning.

As much as discourses of author-ity impose or delimit particular forms of knowledge, their apparent hegemony is never absolute. In fact, such discourses, which often provide the epistemological ground of Euro-American environmentalists, are wholly inadequate tropes for providing positions of understanding. As Sinith Sitthiraksa shows, they ignore and attempt to dislocate the power and memory of third world local and folk knowledges that can provide crucial elements of an environmental education. Using a photo essay as a tool for memory work, Sitthiraksa re-establishes the knowledge produced and practiced by her mother in Bangkok as an essential part of her own environmental sensibilities. This is a personal knowledge, a personal story. Yet it is one that is also part of particular Thai folkloric histories. It is a kind of counter-knowledge. But how North American readers and viewers engage with this knowledge remains in question. As Sitthiraksa asks: "What can they learn from a third-world Mom's life story?"

Fragmenting the multiply-inflected discourse of author-ity, as each of these essays attempts, opens different conditions of possibility; different types of vision and relationality. Totalized realities have become deeply contested. For some, new conditions of possibility lay within the mindscapes of virtual reality. Here is where danger and possibility seriously intersect in the spaces open by fragmentation. Brent Wood heralds this moment of a virtual world, where reality and illusion, self and other, art and science collapse into one another, as place where new fictions of environmentalism can be written. Things are messy and confused in virtualized contexts and disruptive of all familiar referents and discourses of author-ity.

Yet the promises of virtual reality can be very dystopian. Such is true when the illusory boundary-crossing of virtual reality becomes actualized through biotechnology and genetic engineering. Jane Horsley maps the dense politics of these rapidly emerging fields. Biotechnology, and in particular the increasing interest in DNA manipulation, has been a site where questions of ethics, rights, patents, legality, nature, humanity, knowledge and power all intersect. Biotechnology is a fragmenting, gene-splitting practice productive of dangerous possibilities and brutally "real" effects. In the context of late capitalist society the fragmentation of one form of authority--rigid boundaries--may potentially be replaced with other, more fluid forms of power which maintain the omnipotence of particular human subjects. As biotechnology and virtual reality show, we have entered a moment of few guarantees.

Thanks.

The Editorial Collective

GREEN POLITICS AND THE TYRANNY OF THE THINKER

by Jeff Culbert

How can one exercise thought when it is necessary and not exercise it when it is not necessary?
-J. Krishnamurti[1]

Sometimes I think of human cognition as the ultimate environmental problem. It's a simplistic hypothesis, I know, especially in its failure to address the fact that some humans are more implicated than others in creating and perpetuating the mess. But in the context of questioning the viability of the species, it is not one to be lightly dismissed.

The hypothesis is not suggesting that human beings per se are the problem - that we simply took a wrong evolutionary turn and are now riding out some pre-determined Rendezvous with Destiny. But neither is it saying that it is time to discard our old theories in favour of a new, improved model of cognition which is about to roll off the theoretical assembly line. In fact, my concern is not so much with the *content* of thought as it is about thought itself.

The problem with thought is that it conveniently fails to notice itself most of the time, and when it does, it's more likely to yield paradox than it is to come up with something satisfying to the problem-solver within. The more common tendency is for the processes of thought to remain invisible, so to speak, as individuals and societies construct conceptual schemes, and live almost exclusively within the patterns of these abstract frameworks. Besides creating hierarchies of domination within and between human societies, our cognitive abilities are also said to distinguish us from non-human nature. But notice the revealing ambiguity here, because it implies both that cognition is used as the *instrument* of separation, the tool which creates a sharp human/nature distinction, and that cognition is used as *evidence* that the separation is justified. Clearly, there is a conflict of interest at work which should not go unnoticed by those who deal with broader issues of how human societies can fit into the non-human world.

Various groups and individuals are making explicit attempts to challenge the dominant assumptions about the nature/human relationship, and to bring this challenge into all levels of public discussion. But I have chosen to approach the issue of cognition from the perspective of Green politics, because I find Green parties and coalitions to be situated in a theoretically interesting space between the transformative sensibility which motivates them and the instrumentalism of party politics.[2] How they will deal with the strategic and theoretical issues with which they are now struggling will depend, I believe, on their implicit assumptions with respect to the proper role of human cognition.[3]

One way into the visions of the Greens is through the concept of decentralization, since Green politics can be seen as a reaction against the large-scale development and bureaucracy found on both the left and the right of the mainstream Canadian political spectrum. In spite of the differences in their preferences regarding the control of production and the distribution of wealth, proponents of the major ideologies have all promoted expanding industrialism and institutions which centralize power. According to the Green political perspective, this has been a human, social, economic, and environmental disaster, not only because of the specific practices that have been employed, but because of the very scale of these operations and institutions. Thus, a general decentralization is advocated, along with the promotion of increased self-sustainability in communities and bioregions, and a respect for bioregional integrity.

To portray the task of the Greens strictly in terms of instrumental changes towards decentralization, however, fails to do justice to their emphasis on the need for a change in sensibility with respect to nature. In attempting to play a transformative political role in this respect, Greens face co-option every step of the way, because the very notion of what counts as a valid

argument must be part of the change. With this in mind, I have outlined below a series of conceptual traps which await the Greens and everyone else who is working toward a new relation to non-human nature. My suspicion, to make it clear from the outset, is that my opening hypothesis on the dangers inherent in human cognition must be taken seriously. Because humans have developed the capacity to live life in a hyper-cognitive mode, Greens should acknowledge and address what I call 'the tyranny of the thinker' as part of the attempt to find a less destructive way of life. What follows is not meant to discourage or criticize anyone who is making a sincere effort to address our socio-environmental problems, but to open up the discussion to include a perspective which is currently under-represented in the Green movement.

Trap #1: Reversing Dualisms

The history of ideas is full of examples of emerging schools of thought that championed the values which were suppressed by their predecessors, simply reversing a dualism which was in effect without questioning its validity. To give one example, the medieval scholastics, in an over-zealous interpretation of Aristotle, decided that quantification should play no significant role in understanding the world. They were eventually eclipsed by the all-stars of the scientific revolution, who declared - it's tempting to say 'inevitably' - that quantity was of *primary* importance, and that the qualities of the scholastic tradition were mere secondary characteristics of matter. Instead of being recognized as counter-balances to one-sided thinking in a particular historical setting, such reactions tend to be rashly embraced as the new truth, which quickly collapses into dogmatism.

There is a tendency, and perhaps even a need to build shells around new ideas, to protect them from challenge and ridicule from the outside and, most importantly, from one's own conditioning. But the danger is that these will harden in our minds into rigid principles or dictums which are applied mechanically. Perhaps it is the result of an inherited cultural bent toward psychological permanence - the infamous quest for certainty - that disposes us to create such thick shells around our ideas. What could be a temporary, biodegradable layer for protecting something flexible and organic becomes, in effect, a billiard ball, which competes with other billiard ball concepts for the available intellectual space.

Similarly, the decentralization which is advocated by the Greens could be hailed as a transcendent value in its own right, instead of a response to a culture of centralized giantism. In that case, 'small is beautiful' could be interpreted as 'the smaller, the more beautiful,' and upheld as a formula which can be applied more or less mechanically. But as E.F. Schumacher himself made clear in **Small is Beautiful**:

> Today, we suffer from an almost universal idolatry of giantism. It is therefore necessary to insist on the virtues of smallness - where this applies. (If there were a prevailing idolatry of smallness, irrespective of subject or purpose, one would have to try and exercise influence in the opposite direction.)[4]

Jonathan Porritt, in **Seeing Green**, elaborates on criteria of scale:

> Whatever size it is that takes away our dignity, makes us passive recipients rather than active participants, makes us dependent rather than self-reliant, alienates us from the work we do and the people we live with -*that* is too big.[5]

It is not so much the application of a concept, then, as it is a question of compassion, and attention to the *quality* of scale. Here Porritt is addressing social considerations, but the themes brought out concerning conceptualization and compassion can be further elaborated by considering our interactions with non-human nature.

Trap #2: The Search for Environmentally-Friendly Knowledge

Why do we want to 'protect the environment' anyway? For its own sake? For future generations? Because it makes good business sense? Because human survival depends upon it? These perspectives (and others) converge into a single dictum - Protect the Environment - but should this unanimity evoke in us a sense of optimism or suspicion? The danger in the unanimity is that the issues are confused by cross-reasoning, that is, the use of secondary reasons which make an argument more palatable, while de-emphasizing reasons which are much more central to the agents' motivations. Thus, in describing the 're-forestation' component of their operation, a logging company can rhapsodize about their spiritual attunement to nature and the imperative to respect the integrity of the forest, while really thinking more about the need to keep planting trees so that they will have something to cut down in seventy years. Conversely, an environment group may push for the preservation of a wilderness area in terms of its potential for jobs in tourism, while really meaning that destroying such an area is a crime against nature. So the apparent overlapping of ends - 'protecting the environment' - and the lumping

together of *reasons* for doing so is probably masking more fundamental issues.

It is more revealing to get at the second-order questions behind environmental protection slogans. Are we asking, "How much destruction must we inflict on nature?," or "How much development (i.e. destruction) can nature stand?" The former implies that we nurture respect for and compassion with the non-human world and work toward some reasonable minimum of human impact upon nature, while the latter implies that we still want to maximize production (i.e. destruction), but within the limits of sustainability, so that our asses are covered. Thus, the search for 'environmentally-friendly knowledge' must be questioned first and foremost on the grounds of the motivational assumptions behind it, challenging the maximization-of-production ethic as it arises, that is, before becoming entangled in technical arguments concerning where the 'sustainable limits' might be.

Also, the very notion of establishing 'sustainable limits' to production assumes that natural processes are so well understood that the consequences of disturbing them can be predicted with confidence. On this view, environmentally unsound practices of the past simply didn't get all of the data in, or they got it wrong, or they didn't care. But now, we are told, they *do* care, their research is extensive, and they work with teams of top environmental experts, using the latest techniques and equipment. Counter to this, however, is the view that large-scale disturbances have undesirable and unforeseen consequences, not *only* because of faulty planning or knowledge, but because no conceptual map of the natural processes in a given region could ever capture it adequately in a 'system.'

One could say that, in so far as a region can be represented as a system at all, in a mechanical model, there are invisible forces at work which thwart the ideal of ever attaining a model that is comprehensive. It is probably more accurate to say that a natural area is not such a 'system' in the first place, and that any attempts to portray it as such, while useful in limited domains, are necessarily reductions. This means that 'all of the data' could *never* be in, so claims to know the limits of sustainability are misguided or politically motivated.

Thus, the notion of knowledge acquisition for the sake of environmental protection must be questioned both in terms of the motivations behind it, and in terms of the limitations of human powers of knowing and predicting. What we have now is a drive to maximize production, and this drive is justified by the claim to know the limits beyond which 'serious' damage would be inflicted. As in Trap #1, the mistake can be seen as accepting the dominance of conceptual schemes over the Green virtues of respect and compassion. In this case, the human/nature relationship is cast in terms of a subject knowing an object, which is traditionally considered to be valid in so far as it is a detached, dispassionate relationship which precludes the experience of compassion.

Trap #3: The Search for Environmentally-Friendly Value Systems

The call to nurture compassion does *not* mean that we are in need of an ethical system which uses compassion as a fundamental concept. Whereas the notion of value remains an important one, the idea of value *systems* raises the same problems as conceptual schemes: they are cognitive maps, abstractions which we allow to mediate our experiences of the world.

It is beyond me why people feel the need to embrace moral principles and value systems in the first place; it seems like such a petty and egotistical way to live. However, if I say that some people *embody* certain values, that is quite another matter. I may even use the notion of a value system as a tool to articulate my appreciation for their way of life, but this does not mean that they embrace these values conceptually and act on them. In fact, if they did, what strikes me as spontaneous and beautiful would probably seem contrived and untrustworthy - another micro-victory for the management paradigm in which thought commands action. Similarly, declarations that we must create a value system which includes non-human nature, while useful in limited instrumental ways, betray the arrogant assumption that we can formulate a set of values which envelopes and protects all of nature.

This is a conceptual attempt to bring nature

within the realm of human values, and its mirror image is the conceptual attempt to place humans within the realm of natural values. In **Nature's Economy**, Donald Worster points out the tendency to claim the 'discoveries' of science as an objective base from which to justify our moral or political views. The conceptual trick here is to determine what the world is really like (through 'value-free' science) and then behave in a way which is subsequently deemed 'natural,' whether it is acting as an autonomous individual in the free market system (suggested by atomistic mechanism), or by acting as part of a community having a life of its own (suggested by organic scientific traditions). The common assumption is that the facts of nature come first and the values of humans should follow from them. But this stark separation of facts and values is dubious, since values always influence the seeking and the finding of what we call facts, so Worster suggests that it would be more honest to lay these values on the table at the outset and say, "I don't know *why* I feel this, but I do". Then, according to Worster, science can be used to bring this moral impulse to light without being touted as its objective grounding.

Worster's argument addresses the scientific paradigm, but it holds for any form of knowledge which makes pronouncements about 'what is', so it has a much more general relevance. Regardless of the kind of knowledge involved, we are advised to be wary of the pattern of argumentation whereby codes of ethics or politics are derived from conceptions of nature, because "few ideas have been recycled as often as the belief that the 'Is' of nature must become the 'Ought' of man."[6] Many Greens advocate an 'ecocentric perspective,' which is the placing of the human good within the context of the greater good.[7] Worster helps to provide a warning for this project: that it avoid using objectifying conceptualizations as a means of achieving this placement of the human within non-human nature.

From this, I conclude that chances are slim that the problem of the nature/human dichotomy will ever be 'solved' by humans tinkering with such conceptions of themselves and of nature. If the cognition hypothesis is valid, then these conceptions may even be a part of the problem.

Trap #4: Trying to think our way out

The three previous conceptual traps all had to do with where the Greens will go for the intellectual tools with which they argue their case. The warning that I have offered is that if they allow concepts, principles, objective knowledge and value systems to override compassion, then the fundamental problem of the management paradigm remains unchallenged. I haven't defined compassion; in fact, I don't suppose that it would make any sense to do so, since that would imprison it in a concept and defeat the whole purpose. However, as a tentative indication of what I mean, I would emphasize its connection with direct experience over abstraction. There can be no sharp, oppositional distinction between thought and experience, though, because thought *is* a kind of experience, and much of our experience is mediated by thought. When I use the term 'compassion,' I associate it with experience which is not dominated by the thinking self, and not colonized by our theories, ambitions, fears, and conceptual schemes.

For some, this may sound suspiciously like the objectivity myth again: the idea that the patterns of nature can be mapped by a dispassionate observer. But objectivity is tied to a project of achieving a direct correspondence between the theoretical model and the reality, while compassion is about experiencing life, and not the creation and use of theoretical models. Objectivity involves the separation of subject and object, where an 'object' is a conceptual unit which is abstracted out of a world in progress. It satisfies our apparent need to identify, to categorize, and to achieve one kind of understanding, but this comes with a price. When this habit becomes entrenched as a world-view, then what suffers is the very ability to dissolve the subject/object dichotomy for a more connected and participatory experience.

The main intellectual reaction to objectivism was, of course, subjectivism (see Trap #1: Reversing Dualisms). A valuable lesson from this way of thinking was that experience tends to be mediated by thought in much more subtle ways than had previously been assumed. But out of this body of thought also came the much stronger claim that, because all knowledge is socially constructed, we have no direct access to nature at all. The social construction thesis is certainly a powerful one, but the denial of access to nature simply doesn't follow unless we are willing to define experience as essentially cognitive. It is the cognitive faculty (no pun intended) which is broadcasting the message that all is cognitive, so once again, a conflict of interest is apparent. I'd call it a case of having nothing to work with but a conceptual hammer, and wanting to treat everything like a nail.

Both of the schools of thought mentioned above concern themselves with subjects and objects, and hence privilege cognition and the thinking self. It is the habit of assuming that the subject/object distinction is fundamental which sets up the false dilemma of having to choose between objectivism, with its implicit cognitive imperialism, and subjectivism, with its implicit cognitive apartheid.

From the perspective of Green politics, the human/nature distinction is implicit in both the dominant attitude toward nature as a resource, and in the tendency to create highly controlled human environ-

ments which are 'on top of' nature rather than within it. Parallel to the need to problematize this distinction is the need to pay attention to the subject/object distinction, where the 'subject' can be understood as the thinker who affects the separation. If one's experiences are always mediated by thought as I have described it, then the separation always holds, because they are a thinking subject's encounter with objects. Thoughts from the past, with all of their inherent conditioning, are used to create expectations for the future, with the result that the present is rarely encountered with creativity and immediacy.[8] My opening hypothesis, that cognition is the ultimate environmental problem, may be a bit melodramatic, but the colonization of experience by thought, and the marginalization of experience which is not so colonized may well be key aspects of a more thorough understanding of the environmental predicament.

One interesting way of addressing the problem is provided by Dennis Lee, who approaches the human/nature relationship with an acute awareness of the role of thought in the matter. In order to speak about the nature-human relationship, it is common to dichotomize the world according to such sorting mechanisms as natural/artificial or wild/domesticated. In the most basic models, categories are seen as discreet boxes, with any given entity fitting into either one or the other. Thus a telephone is an artificial object, and the moon is a natural object. Another model is the spectrum, which offers *degrees* of change between the two categories. The waterways of England, for example, are artifacts in so far as they have been manipulated over the centuries, but we still feel that the Thames is basically a natural phenomenon, so we would want to place waterways somewhere between the two extremes of the spectrum. The key point is that we tend to want to locate entities somewhere, and decide what they *are* with respect to the proposed dichotomy.

In **Savage Fields**, Lee explores a dichotomy which is not a sorting mechanism. Everything which we encounter is *both* a concept which is assimilated into a world-view (the realm of 'world') and a part of that which defies conceptualization (the realm of 'earth'). Thus the telephone and the moon can be reduced to the concepts of world, so that we can know and use them. Or, as manifestations of something sacred and unknowable, that is, something outside of our reductive concepts, they can be seen as part of the unfolding of earth.

The importance of Lee's dichotomy is in how it challenges and limits the domain of cognition. By creating space outside of world (that is, outside of the 'world-view' world-view), he is opening up the possibility of becoming aware of thought as it arises, so that we are not enslaved to it, but can open up to experiencing earth. Lee's conclusion has the entirely appropriate ring of paradox: "To think sanely must be to think against thought."[9]

This is not a call for the simple reversal of a dualism, with a claim that thought should be eliminated from our lives. But if the human/nature relation is indeed an issue which the Greens want to address, then a long intellectual tradition of splitting subject and object must be questioned, and with it the tyranny of the thinker as cognitive subject.

NOTES:

1. J. Krishnamurti, **The Awakening of Intelligence**, (New York: Avon Books, 1976), p. 19.

2. Kate Sandilands, "Ecology as Politics: The Promise and the Problems of the Ontario Greens," in W.K. Carroll, ed., **Organizing Dissent: Contemporary Social Movements in Theory and Practice** (Toronto: Garamond Press, 1992), p. 157.

3. For background on this issue in the context of Green political theory, see the exchange between Robyn Eckersley, "Divining Evolution: The Ecological Ethics of Murray Bookchin," **Environmental Ethics** 11:2 (Summer 1989), and Murray Bookchin, "Recovering Evoloution: A Reply to Eckersley and Fox," **Environmental Ethics**, and 12: 3 (Fall 1990).

4. E.F. Schumacher, **Small is Beautiful: Economics as if People Mattered** (London: Sphere Books Ltd., 1974), p. 64.

5. Jonathon Porritt, **Seeing Green: The Politics of Ecology Explained** (Oxford: Basil Blackwell Ltd., 1984), p. 87.

6. Donald Worster, **Nature's Economy: A History of Ecological Ideas** (Cambridge: Cambridge University Press, 1985), p. 335.

7. See, for example, Robyn Eckersley, **Environmentalism and Political Theory: Toward an Ecocentric Approach** (Albany: SUNY Press, 1992), chapter 3.

8. This is the focus of much of the work of J. Krishnamurti. See, for example, **The First and Last Freedom** (Wheaton, Illinois: Quest Books, 1968), p. 285.

9. Dennis Lee, **Savage Fields: An Essay on Literature and Cosmology** (Toronto: Anansi, 1977), p. 111. In this book, Lee examines Michael Ondaatje's **Billy the Kid** and Leonard Cohen's **Beautiful Losers** using the dichotomy outlined here.

Jeff Culbert is from Lucan, Ontario. He has studied physics, education and philosophy, and is a founding member of the Bum Band. He is currently in the M.E.S. prograin at York University and is involved with the Ontario Greens.

A Fable for the New Age

by Mark Lutes

The Little Red Hen approached the barnyard animals with a proposal to grow some wheat to bake a loaf of bread.

> *"Tilling the soil will lead to run-off and erosion," said the horse.*
> *"Monocultures lead to loss of biodiversity and insect infestation," said the dog.*
> *"This variety of wheat was created by genetically manipulating seeds stolen from animals in the forest," said the cow.*

So the Little Red Hen tilled the soil, planted the seed, and a few months later harvested the ripe wheat. Then she asked for some help with grinding the wheat into flour and cooking the bread.

> *"The seeds are pre-sprouted plants, and killing them is murder, as well as depletion of a renewable resource," said the rabbit.*
> *"Whole wheat is better for the digestion," said the goat.*
> *"The stove uses wood that was clearcut, and burning it contributes to global warming," said the ewe.*

So the Little Red Hen ground the flour, cooked the bread, then asked the animals in the barnyard if they would like to help eat it.

> *"There are starving animals in the forest that should get it first," said the pig.*
> *"It was made by killing living plants, and I will only eat things that are already dead," said the worm.*
> *"The loaf has an intrinsic value, and eating it would violate its rights," said the cat.*
> *"I cannot eat it when I don't know if my children and grandchildren will have enough," said the frog.*

The Little Red Hen then held an auction for the bread, where the highest bidder could deliver it to the hungry animals in the forest, hold a ceremony around it to mourn the wheat that died it its production, allow it to exist untouched by the barnyard animals, or preserve it for future generations.
The bidding was so spirited, and the final price was so high, that the Little Red Hen was able to hire all the animals in the barnyard, and even some in the forest, to clear more land on which to plant wheat in the following year to fill the seemingly unlimited demand for bread.

TOURIST TALES: ECO-TOURISM AND ORANGUTANS

by Constance Russell

All tours are tours of desire and tell us more about our society than about the society to be visited.[1]
-Edward Bruner

In my own "tour of desire," I travelled in the Fall of 1992 to see the orangutans of Borneo. On a personal level, I had wanted to see orangutans in the wild ever since studying them in the zoo a number of years ago for my B.A. thesis. At the time, I was a psychology major specializing in animal behaviour, and had elected to do an observational study on sex differences in their play behaviour. I spent many hours watching these magnificent creatures, so like us, confined to such maddeningly small and barren quarters, and I longed to see them as they ought to be: in their own world, in context. But I also went as a researcher to document and analyze the other tourists' reactions to, and experiences with, the orangutans.

I visited the Orangutan Research and Conservation Project located in the Tanjung Puting Reserve in Kalimantan (Borneo), Indonesia. Because of financial difficulties, the director, primatologist Birute Galdikas opened the Project to eco-tourists. Through the auspices of "Earthwatch,"[2] tourists paid $2100 (US), plus airfare, for the opportunity to act for two weeks as 'research assistants.' Dr. Galdikas has long been a strong supporter of eco-tourism. When asked how average people could improve the fate of orangutans, she replied: "One of the ways an individual can make a difference is by going to these places, where wild animals live, and making one's voice heard there through being a tourist, a modern eco-tourist who does not leave anything behind."[3]

Eco-tourism is increasingly being cited as a panacea for many current conservation woes, primarily because it addresses the economic contexts within which the non-human animals are forced to live, by providing financial incentives for wildlife conservation.[4] This idea has been criticized, however, for it appears that it is rarely the local people who benefit financially. Also of concern is that such notions lead to the commodification of wildlife. Thus, if there are few real financial incentives for local communities to put much effort into conservation practices, and if the animals are seen only as commodities, it is reasonable to assume that if other ventures, like cattle farming, seem more profitable, they will be pursued.[5]

Of even more interest to me is the other standard rationale for eco-tourism -- that it is a form of environmental education whereby tourists, through experiential learning, develop richer understandings of wildlife, the contexts within which the wildlife exists, and the particular challenges faced for continued survival. I would contend, however, that people embark on these journeys with preconceived notions about their travels and thus may not be open to the challenges offered them. Visitors, whether tourists or researchers, interpret their new surroundings through the context of their ideologies and from within the framework of their past experiences. We each construct our own stories to understand and describe our experiences.[6]

The Orangutan Project is the most popular of all Earthwatch destinations largely because of the orangutans. Tourists help research and conservation efforts through such tasks as following wild orangutans for up to fifteen miles a day to gather data on their feeding behaviour, carrying food fifteen miles to rehabilitant ex-captives, or carrying ironwood seven miles through thigh-high swamps, in equatorial heat, to build a park hut; this is no mere "high tea" with the mountain gorillas. (An extremely popular eco-tourist venture is taking tea with the gorillas of the Virunga Mountains. Tourists hike up the mountain, with the assistance of local guides who carry all their gear, nestle in beside a habituated gorilla group, and enjoy a picnic replete with champagne, caviar and other gastronomic delicacies.) Compared to other eco-tours, the educational opportunities at the Orangutan Project are

prime -- two weeks of experiential learning plus lectures by Dr. Galdikas and visiting scientists.

Obviously this type of vacation is not for everyone. These tourists were American, Canadian, British and Australian, ranging in age from 25 to 75, with the majority in their mid-thirties. All had some post-secondary education, and most had positions in the professions. Thus far, these qualities could characterize most tourists who embark on expensive trips. What set this group apart from most was their commitment to conservation. All were involved in environmental organizations in their homelands and all came with intent to 'do good.'

I have long suspected that the most effective way of provoking some feeling of connection with nature would be the actual experience of being in it. Since I personally find it difficult to translate into words my own feelings associated with being in nature, it seems futile to attempt to convince people on an intellectual level that they are not separate from and above, but rather part of, nature. People must *feel* it. Hence my interest in eco-tourism which is touted as a superlative environmental education opportunity.

And yet, as John Urry writes:

> When we 'go away' we look at the environment with interest and curiosity. It speaks to us in ways we appreciate, or at least we anticipate that it will do so. In other words, we gaze at what we encounter. And this gaze is ... socially constructed and systematized.[7]

In other words, tourists, like everyone else, see what they want to see, what they expect to see. The notion that we socially construct our experience leads me to wonder what baggage we bring with us. Are we seeing ourselves as versions of Jane Goodall or as a member of the 'Wild Man' movement? Perhaps we see ourselves as the intrepid explorer, the animal lover, the collector of indigenous art, or the intelligent and inquiring academic? How do these self-concepts, and our related expectations as tourists, influence our attitudes about the non-human animals we observe? As Barbara Noske writes: "The place of animals has been very ambiguous, especially for the biological and the social sciences, since the animals form the bridge as well as the boundary between humanity and nature."[8] It is partially because of this ambiguity that so many interpretations of the lives of animals are possible.

In Borneo, three stories emerged which seemed to define our interactions with the orangutans and I was a character in them all. These stories were not distinct, rather they oscillated in dominance, occasionally blurring into curious combinations. In general, though, we each stuck to one story seemingly in line with our original motivations and expectations.

So, for each of us, the orangutans became different creatures. Most common among these creatures were the "Orangutan as Needy Child;" the "Orangutan as Pristine Nature;" and the "Orangutan as Subject for the Perfect Photograph."

Orangutan as Needy Child

With increasing Indonesian enforcement of the ban on trade in orangutans, the Project has found itself home to confiscated ex-captives. They invariably arrive young and traumatized from witnessing the murder of their mothers and from being kept in horrid conditions.[9] The Project accepts these orangutans and attempts to rehabilitate them to the wild. Rehabilitation has become the primary activity of the Project and much of the publicity for fundraising emphasizes this work.

Thus many of the tourists arrived dreaming of their role in this story, that of working with the 'babies.' They were disappointed, however, as little of this work now occurs in easily accessed locations, mostly due to concerns about overloading the original study area with ex-captives. Still, they were able to have this prized contact with the young orangutans; it just meant hiking about fifteen miles per day carrying twenty pounds of fruit to remote feeding stations. This activity did not daunt most of the tourists, and about half of the group chose this as their primary task. When asked why, most explained that they felt the most needed with the young orangutans and that they loved the chance to comfort (i.e., cuddle) them.

On a similar note, all of the tourists commented on their feelings about interacting with an infant gibbon who too had been a victim of the pet trade. He constantly craved our touch (at six months, he should still be on his mother) and would emit loud whimpering cries if left alone. Like the orangutans, he was a needy fellow creature and it was incredibly satisfying to feel helpful. Yet there are many striking similarities between our actions and feelings and those which drive the pet trade. One theory posits that our attraction to animals with large heads, big eyes and short limbs (dubbed neoteny by psychologists) is the same as our parenting response to our own infants, merely generalized across the species boundary.[10] Whatever the reason, it is ironic that one consequence of our attraction results in the pet trade of exotic, non-domesticated animals.

And one must ask, who benefits from our desire to help these young ex-captives? We certainly fulfill our parenting needs and return with our stories of communing with a 'wild' animal. Yet if the goal of the Project is truly rehabilitation to the wild, is contact with us in a caregiving role appropriate? I don't know the

answer to that one. When very young, I think these orangutans are comforted by having someone to cling to as a surrogate mother. But watching juveniles and adults looking to us for food and companionship was disturbing. I suppose a lot of this depends on what your definition of 'wild' is. Which brings us to the next story.

Orangutan as Pristine Nature

Like me, many members of the group had travelled to Borneo explicitly to see the orangutans in the wild. Most of our days, then, were spent walking up to twenty miles a day through the forest, necks craned upwards, searching for signs of the red ape. Two different tourists (not myself) were fortunate enough to find wild ones and their excitement was palpable. Those of us who did not find wild orangutans, however, did not leave disappointed. Anyone who spent a significant amount of time in the forest was rewarded with sightings of probiscus monkeys, gibbons, barking deer, mouse deer, rhinoceros hornbills... Such encounters were cherished, and the rarer the animal the more dear the experience became; we had joined the ranks of very few westerners.

This fascination with the rare in nature has probably been most obvious in birders who have often been criticized for their obsession with lists and who have been known to crush plants in their pursuit of the next elusive creature. Naturalists with other focal interests also fall into this trap. John Fowles recounts how, upon encountering a rare species of orchid, he measured it, mapped its location, photographed it, then left: "I realized I had not actually *seen* the three plants in the little colony we had found... I had managed to set the experience in a kind of present past, a having-looked."[11]

Another essential element in the pristine nature story, of what Donna Haraway calls our "distant dream space,"[12] is the setting: that of few fellow tourists. As Urry notes, it is the eco-tourist who strives to "enjoy the unspoilt view before the crowds get there" and who desires "solitude, privacy, and a personal, semi-spiritual relationship with the object of the gaze." And what happens when those crowds do begin arriving? The "perceptual carrying capacity" is exceeded and the eco-tourists move on to yet another pristine area.[13] Although a slower process than more traditional development, the end result is the same.

Hence for those of us who advocate wilderness preservation (as opposed to conservation), implicit in our efforts is a desire to exclude any human intervention.[14] Such an approach has been highly criticized, however, by 'developing' nations as just another form of neo-colonialism, totally lacking in any understanding of the role of humans in those natural settings.[15]

Orangutan as Subject of the Perfect Photograph

What struck me most was the importance of photography to the eco-tourist experience; I have never seen so much camera gear. The first orangutan encountered by each tourist was viewed through a lens and had at least one full roll of film devoted to it. This camera-crazy behaviour did calm down and subsequent ex-captives were photographed with more discretion. Still, it seemed that some of the tourists viewed their entire trip through a camera lens. And that does make a difference; I noticed that when I had my camera to my eye waiting for that perfect shot, I experienced the world differently. Gone was anything on the periphery, gone was any context; I was focused on the object of my gaze and nothing else. Such decontextualization and objectification can be troubling. While I do not agree with the overstated idea that shooting with a camera is just as destructive as shooting with a gun, I do think we need to consider the implications of our uses of photography. Susan Sontag writes:

> Guns have metamorphosed into cameras in this earnest comedy, the ecology safari.... When we are afraid, we shoot. But when we are nostalgic, we take pictures.[16]

I would also add: when we are seeking status, we shoot. Like the game trophies of the past, eco-tourists display their coveted shots with pride. But not any shot will suffice as a representation of our adventures. For example, since it is extremely difficult to photograph wild orangutans as they are generally sixty feet up in the 'underlit' canopy, great effort was made to ensure that the ex-captives looked wild. No buildings or other evidence of humans were present in

these treasured pictures. Unless, of course, it was the requisite 'me and an orangutan' shot.

But photography is not merely about distorting context or objectification. Rather, it can be a useful tool for transmitting our experiences in a non-verbal way. I have shown my orangutan pictures to many people, including school groups, and I find the photographs essential as they draw people into my stories about deforestation and the pet trade. We cannot all travel to Borneo to see the orangutans but through photography we can catch glimpses of their magnificence and our commonality.

Reflections

Analysis of each of these orangutan stories illustrates a number of potential problems with our relations to nature. Yet there I was, someone schooled in "environmental philosophy" acting no differently than any of the other tourists. Sure, I did on occasion question myself about my need to hold the gibbon, to see a wild orangutan, and to get stunning photographs. But that questioning didn't change much. When it came down to it, I couldn't convince myself I was really doing anything that wrong. This demonstrates to me either that my guiding theories are irrelevant to 'real' life or how deeply rooted I am in my culture. But maybe both are right; we can't pretend to live in an either/or world.

I do think that the stories we create about our fellow creatures are important and that our ways of interacting with other life need to be changed. But these changes will not come easily, if at all, and little will be gained from self-righteous judgements. There are some positive impacts of eco-tourism. The Orangutan Project was saved financially by eco-tourism; and has now become its main source of income. The public relations boon for orangutans is notable, working something like a chain letter. Each tourist, who from their experience developed new understandings of orangutans, recounts their stories to friends and families. Some tourists have begun speaking publically on the plight of orangutans. Others have displayed their photographs, written articles or created films about their experiences. As well, I did not see evidence of any of the problems described in the eco-tourist literature, like habitat destruction, that would be associated with our tromping about in the forest on our quests. That is probably a function of how few tourists travel to Tanjung Puting.

Still, the stories we create about our fellow creatures are important and need to be examined. There is one story that is not, and cannot, be told: the story of the orangutan as orangutan. It delights me that there are worlds beyond our comprehension, worlds which will never be described in any tourist's tale.

Notes

1. Edward M. Bruner, "Of Cannibals, Tourists, and Ethnographers," **Cultural Anthropology**, 4:4, (1988), p. 438.

2. Earthwatch is an American non-profit organization whose mission is to provide funding for research projects that "improve human understanding of the planet, the diversity of its inhabitants, and the processes that affect the quality of life on Earth." The organization generates its funds by selling laypeople the opportunity to participate in research activities for two to three weeks.

3. Susan Swanek & N. Glenn Perrett, "An Interview with Dr. Birute Galdikas," **Animal's Voice**, (Summer 1992), p. 8.

4. Elizabeth Boo, **Eco-tourism: The Potentials and Pitfalls** (Washington, D.C.: World Wildlife Fund, 1990).
Joe Keenan, "Eco-tourism: Where Capitalism and Conservation Meet," **Mexico Journal**, (May 22, 1989), pp. 17 - 24.
Hortense Whelan, "Nature Tourism," **Environmental Conservation**, 15 (1988), p. 182.

5. International Union for the Conservation of Nature, **World Conservation Strategy**, (Gland: IUCN, 1980), Section 7.

6. Donna Haraway, **Primate Visions: Gender, Race, and Nature in the World of Modern Science** (New York: Routledge, 1989).
John Urry, **The Tourist Gaze: Leisure and Travel in Contemporary Societies** (London: Sage Publications, 1990).

7. Urry, p.20.

8. Barbara Noske, **Humans and Other Animals: Beyond the Boundaries of Anthropology** (London: Pluto Press, 1989), p. 80.

9. It is estimated that only 1 in 8 infants will survive to market. It is only infants, not unmanageable adults, that are desired in the mostly Japanese and Taiwanese pet trade for the going rate of U.S. $40,000. Birute Galdikas,"Personal Communication," (1992).

10. Neoteny was first coined by the ethologist Konrad Lorenz.

11. John Fowles, "Seeing Nature Whole," **Harper's**, 259 (1979), p. 61.

12. Donna Haraway, "Primatology is Politics By Other Means," In Ruth Bleier (ed.), **Feminist Approaches to Science** (New York: Pergamon Press, 1988), p. 78.

13. Urry, pp. 42 & 45.

14. T. Ranger, "Whose heritage is it?" **Journal of Southern African Heritages** (1989), p. 50.

15. Ramachandra Guha, "Radical American Environmentalism and Wilderness Preservation: A Third World Critique," **Environmental Ethics** 11:1 (Spring 1989), pp. 71 - 83.

16. Susan Sontag, **On Photography** (New York: Delta, 1977), p. 77.

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Flight

It's one of those late flights
from the west coast out of San Francisco.
Sunrise in the mid-Pacific. Daylight slides
under the half-closed cabin blinds.
There's no horizons here, or coasts. Only the reefed
and coral-coloured air.

And when they get there? What if it's
no longer their city? What if the streets are narrower,
gardens overgrown with a tangle of blackberries?
These things they've kept: those flawless mornings
at the end of winter. Roof-lines clear against the sky.
Frosts dissolving over grass.

Sunlight flashes off the Bay.

It's too hard here living with such images;
cobalt, gold, vermilion.

And in another hemisphere, December's
grey-ridged light
gathering into windrifts while they sleep.

Rosemary Blake

Promontory

All through July currents of warm air
from the Gulf of Mexico drift north and north
stifling the boulevards till we can barely
breathe, until after a little sleep there's
that creak of light along the edges of the lakeshore.

Too hot to lie close.

I think of what that weekend by the sea at
Wilson's Promontory. Winter,
when we slept on groundsheets in July's cold.
The winds above the surf beach, ti-tree
almost horizontal.

You take the boys to Georgian Bay for one
last weekend in September.
Warmth's too short here.

Sometimes when you wake in winter
even in this overheated room you grumble
the blankets round you. Fists of cold rain.

Rosemary Blake

The Passage of Time

by Noa Lior

Alone in my apartment, sleeping in my bed, I awake with some odd movement at my feet. I move back the covers in one quick motion to expose my legs. The frog jumps to the floor. He leaps around my apartment, an elegant dark grey arc in the lighter grey of 5 a.m., whimsical and joyful.

I reach over to a straw box on the green wood cubes I use as a bedside table. It used to hold condoms. I get out of bed. I turn on a small lamp. With the box top in one hand and the box bottom in the other, I catch him as he begins a leap.

Out on my balcony, I release him over the edge. I am too lazy to dress, go downstairs, walk three minutes and release him into the ravine. As he falls, so does my estimation of myself. How can he possibly survive a 12 storey fall straight down onto concrete? Will there be a splat? I realize this now. It is too late.

It is light outside now, and I can see perfectly. I look down. Instead of the roof of the main entryway which I usually see, halfway down the front wall of my building one of the apartments on the sixth or seventh floor has a large terrace. It is full of plants and potted flowers. I feel better. His chances of survival are improved. A shorter fall, and the very real prospect of a softer landing.

I am still on my balcony. No frog. No terrace below. I am watching a fairly large bird fall. Like a rock. Calmly. Unflapping. Head up. Feet tucked in. Wings tucked in. He is making no motion to fly.

"Move," I think to him. "Move! Fly! Try!" He does not even seem distressed. He approaches the ground. He lands. I wince. Then I look. He is motionless for only moments, then begins to walk around. He is completely fine. I breathe.

I go downstairs. Instead of being at the front of the building, I am at the back. It is the back of the building I grew up in. I move very quickly to the two little girls waiting for me. One is three or four years old. The other is nine or ten. They stand close one to the other. I kneel in front of them, and scoop the younger into my arms. She has just been through a risky experience, the threat of physical harm. She is unhurt. I know this without examining her. She is not crying. I take her into my arms to comfort and reassure her.

The older girl, who has not faced the same danger, looks me in the eye steadily and says: "Sometimes I am jealous when she gets all the attention."

I gather her into my arms also. I hold them both. I like them both. Equally. Wholly and deeply. Uncritically and instinctively. I did not give birth to them. Yet they are of me.

CONCEPTS OF NATURE CONSERVATION AND PRESERVATION: THE STRUGGLE BETWEEN METROPOLE AND PERIPHERY

by Donald Gordon

There should be little doubt among lovers of nature that we in the over-industrialised Western world have not yet developed an effective concept for protecting nature from the demands of human society. Nonetheless, we are convinced that our critically flawed approaches must be adopted in any nature-rich, less-industrialized country which will tolerate our rantings. Approaches to nature protection, however, are far from being universally applicable and must be recognized as being deeply rooted in the cultural and ideological perspectives of their creators. Many long-established and well-intentioned concepts and approaches to conservation must be queried, as must some more recent preservationist prescriptions. Critical weaknesses in these concepts arise from the desire to exclude all humans from the nature-protection equation. Such an approach inadvertently decrees that nature protection be relegated to those peripheral areas of little concern to our resource-gobbling society. In order to gain more widespread effectiveness, advocates of nature protection will have to be sensitive to the cultural context of their efforts, and energetically pursue local support by integrating local human concerns.

Before proceeding, definitions of two contentious terms are required. "Conservation" is commonly defined as the management and utilization of any resource in such a way as to ensure its perpetuation.[1] It implies that some degree of human benefit is derived from the use of the resource. Although "conservation" has, since the efforts of Gifford Pinchot, come to be associated with technocratic exploitation, many societies living at or near subsistence levels have developed conservation practices which have been sustained for countless generations.

"Preservation" implies a belief that conservation is too weak a concept, and too subject to co-option by resourcists, to effectively protect nature from depletion; in order to protect nature we must lock it up beyond the reach of any would-be exploiters. Preservation has been defined as "the protection of wildlife and habitats from all human intervention."[2] It seeks to protect nature by separating and externalizing the ever-problematic human factor.

There can be little doubt that, in both the over-developed and less-industrialized worlds, most formal approaches to nature protection are failing or are actively being marginalized. Not only are new parks rarely being created, but existing ones are coming under all manner of attack. Much of this strain is blamed on such undoubtedly important factors as rapidly increasing human populations, the nature-consuming dictates of the international capitalist system, and Western society's predominantly exploitation-oriented concept of nature. Some of this blame, however, must be attributed to the structures and systems created by nature-lovers themselves for the protection of wildlife and habitats, as these systems are not proving sufficiently resilient to resist many external pressures. In much of Africa, as well as other less-industrialized regions, formal nature protection remains built around a system of parks which were imposed during the colonial era. These areas were almost invariably created by whites, for whites. Their intention was not to protect these areas from economic development, but to protect them from the indigenous people. Although the context of nature conservation has changed enormously since the colonial era, the approach of conservationists often has not. Thus, parks have commonly become post-colonial anachronisms, and many are subject to overwhelming pressure from surrounding inhabitants. Since the colonial withdrawal from Africa in the 1960s, nature enthusiasts from over-industrialized countries have been pre-

dicting that parks would soon be overrun by virtual armies of landless "inherently destructive" African peasants. This possibility still exists, but if conservationists end up in a last ditch defence of bio-geographical islands called national parks, it is largely their own fault for arranging the conflict in this way.[3]

Not only are parks a Western concept but, as monuments to the "otherness" of nature, they are also the manifestation of an urban myth. 'Nature' becomes those surroundings which one must drive hundreds of kilometres to reach, and in which humans are but temporary visitors. 'Nature' is guarded and preserved by wardens or rangers (the same terms being used to describe prison guards and soldiers respectively) who, having studied "recreation management" at an urban college, carry out their tasks in pseudo-military garb. The costs of these efforts are, of course, borne by urban-based governments.

Despite profound weaknesses in the park-based approach to conservation, "Make the area into a park!" is the cry of preservationists from Temagami to Amazonia. They may not mean to subject the area to roaming tour buses, but they do mean to stop all human exploitation of an area and hand its control to a national, or even international body. This is indicative of a simplistic understanding of both the function of parks and the needs of conservation. Several of North America's most famous parks, such as Banff, Yellowstone, and the Adirondacks, were created as tourist attractions for economic development. Wilderness was preserved unintentionally.[4]

In Africa, one of the most constant features of environmental protection over the last century has been the increasing centralization and urbanization of control over wildlife and their habitats. Early colonial authorities enacted laws governing the killing of game and soon moved on to designate large areas as game reserves and, later, national parks. The indigenous people, who may have lived in these newly-designated "wildernesses" for centuries and played an active role in the creation of the landscapes which the Europeans so admired, were relocated outside the park boundaries. Vast reserves reflecting the European myth of "untouched Africa" were created, to be controlled by trained managers from government departments. That these areas had appeared to be "wilderness" is a tribute to the success of the indigenous peoples' traditional relationship with the land.

One observer of conservation in Africa notes that antagonism toward national parks by people living around them is universal and will likely last as long as parks continue to be operated under their current philosophy.[5] A handbook on the management of protected areas in the tropics states that one of the two most serious threats to indigenous wildlife is the "alienation of the relevant people from both the use and protection of the wildlife resource."[6] The fact that this has occurred on such a widespread basis indicates that the present approaches are running counter to the long-term interests of nature protection.

Colonially-imposed park policies have persisted in Africa and elsewhere in the less-industrialized world not to preserve nature for the value of nature itself, but for the commercial profits from international tourism. These profits have meant that nature protection through parks has key supporters among the influential urban elite, while it alienates the rural poor who receive no benefits from the existence of parks. One researcher has likened African parks to beef ranches, producing services for consumption by foreign tourists:

> People, the indigenous producers, are no longer seen as a resource and as a basis for development, but as an obstacle to development. Like the ranch, the national park is easier to handle and control than traditional human-use systems, easier to gear toward the overriding national development goal of increased, export-oriented production under firm state control.[7]

Such an approach is obviously not a long-term solution to the challenges facing nature protection. Since central governments have acquired sole control over nature protection, it should not be surprising that conservation is chronically subject to the whims of government policy, both in the over-industrialized and less-industrialized worlds! The park approach to conservation, which alienates local people, effectively ensures that conservation lacks a local constituency. If the creators of the park concept had actively tried to give opportunistic governments a free hand to exploit resources in parks as they wished, they could have produced no more effective means than to ban all settlement or pursuit of livelihood within parks. Lacking local support, the fate of nature is left in the hands of bureaucrats, opposed only by a handful of urban-based recreationalists or foreign tourists.

Profoundly disturbed by the on-going human assault on nature, many articulate voices are advocating the widespread adoption of preservationism. As passionate as these voices may be, the preservationist approach to nature protection has several critical weaknesses. Some of these weaknesses have already been exposed in national park-based conservation, with which preservationism shares several characteristics. Policies aiming at the "preservation" of nature through strictly-defended "preservation areas" would, in fact, be doing a serious disservice to the achievement of effective, more broadly-based nature conservation, in

both the over-industrialized and less-industrialized world.

Although often portrayed as having universal application, preservationism is firmly rooted in the North American experience and relationship with nature, and in North American wealth. Preservationism has developed as an opposing force to resource-hungry, economically expansionist North American culture. As such, it is inextricably linked to the ideology of a consumer society. As Guha shows, Americans' increasing need to visit preserved wilderness areas is a direct consequence of economic expansion; the leisured appreciation of wilderness is yet one more amenity of modern culture.[8] Thus, preservationism works against the achievement of widespread environmentally-sensitive livelihoods.

Preservationism makes the critical error of seeking to exclude humans from the equation of nature protection. Its urban roots are exposed by its failure to consider issues such as responses of, and economic alternatives for, rural dwellers. As it excludes locals, preservationist policies would, presumably, have to be bureaucratically enforced on an unwilling rural population.

Preservationism appears to do nothing to respond to the classic weakness in current approaches to nature protection in which the metropole attempts to set the policy at the periphery's expense and despite its opposition. Large-scale nature protection will never be successful if it is a structure which entrenches and perpetuates social inequities between the metropole and the periphery, but instead will create a peripheral battleground. Many existing preservationist approaches actively marginalize the voice of the periphery; whether one is referring to Temagami or to Africa, locals are portrayed and perceived as being hostile to nature, while only metropolitan nature-enthusiasts have the virtuous answers. Thus, nature protection is often achieved through disempowerment, as areas are preserved where locals have only a weak voice. In order to gain broader success, nature protection must integrate ecological and social concerns, rather than attempting to deal with just the nature component of this equation.

When translated to the less-industrialized world conservationist, and particularly preservationist, aims of Western nature-lovers take on deafeningimperialist overtones that are likely counter-productive to developing solutions to nature protection issues. The prominent American biologist Dan Janzen advocates the securing of control over large regions of the tropics by (Western) biologists. He states that "if biologists want a tropics in which to biologize, they are going to have to buy it with care, energy, effort, strategy, tactics, time, and cash."[9] Such imperialist sentiment weaves its way through the World Wildlife Fund's fundraising scheme "Buy an Acre of Rainforest" and the effort by Canadians for Conservation of Tropical Nature to safeguard a Brazilian forest by buying it. These profoundly North American approaches to nature protection regard locals as mindless destroyers of nature, not as beings subject to an array of external pressures - including those wrought by unsympathetic foreign preservationists.

Statements implying belief in the superiority of North American ideas for nature protection come from surprising sources. The respected American scholar Roderick Nash states that "nature appreciation is a full-stomach phenomenon" and, with extraordinary arrogance, suggests that:

> the less developed nations may eventually evolve economically and intellectually to the point where nature preservation is more than a business.[10]

Canadian naturalist John Livingston may be overstating his case when he states that "there is little or no preservation tradition" in the tropics and subtropics.[11] One might well ask if such a tradition exists anywhere and, indeed, why there should be such a tradition if most North American interest in preservationism is a reaction to over-industrialization.

The desire of some Western nature organizations to impose Western notions of wilderness preservation on Third World peoples may indicate a lack of understanding of indigenous practices that have conserved nature in these areas for centuries. Many animist religions contain both conservationist and preservationist practices, although these have often been damaged by religious conversion and the advent of centralized conservation. The future of nature may, in fact, still be far brighter in the less-industrialized world than in the over-industrialized world. There is less of a tradition and ideology of controlling nature in the less-industrialized world, and the average citizen has far lower expectations of what nature should provide for him/her.

Preservationism is a North American response to over-development which does not translate usefully to those non-Western societies which are not governed by disposable income levels, supply-side economics, and planned obsolescence. The inequities and cultural assumptions inherent in the pursuit of international wilderness preservationism have certainly not gone unnoticed. One environmental philosopher notes:

> While wilderness preservation is truly a significant contribution to world civilization, the question whether this contribution is entirely positive ethically is more problematic. As wilderness is

> generally understood... by mainstream American tradition, and as it often appears... to those Third and Fourth World peoples who actually live on the most intimate terms with wild nature, it may well be just another stanza in the same old imperialist song of Western civilization.[12]

This issue is not limited to ethical implications, but also has crucial operational impacts as well. Many rural dwellers in the less-industrialized world are well-practised in opposing centralized policies which impose foreign, unsuited demands on the use of their environment.

Western cultural approaches to nature suggest that many Western nature enthusiasts may have less to offer to the field of nature protection in the less-industrialized world than we would like to admit. The distinct and unbridgeable separation of humans and "wilderness" in Western thought profoundly colours our cultural approach to nature protection. When John Livingston states that "As far as human settlements are concerned, 'man in harmony with nature' is meaningless gibberish,"[13] he does appear to be basing his view on the Western experience. An ecologist who has worked for twenty years in Africa states:

> I fear that the strong effects of our cultural and social backgrounds ill-prepare us for work in Africa. Perhaps our goals are the product of an elitist Western group and they are not only unsuited but undesirable for conservation in Africa.[14]

Unwilling or unable to derive subsistence from "wilderness," Westerners commonly view it as something to be either utterly tamed or left utterly untouched.

Westerners commonly have an ideological tendency to put a powerful agency in control of the defence of nature, which may also be counter-productive. The World Conservation Strategy (WCS), created by such leading forces in conservation as the WWF and the IUCN, reveals a reaffirmation of the value of centralized conservation. It states that there are two key problems facing conservation. The first is insufficient public participation in conservation and development decisions, while the second is insufficient environmental education.[15] Both of these indicate an understanding of conservation as top-down, centrally- (or even globally) enforced, and centered around parks and reserves.

The value of centralized approaches to nature protection is beginning to be questioned, particularly in the less-industrialized world. A reason for this is revealed in a recent study of common-property issues:

> Natural resource projects in the developing countries that do not actively incorporate the local users will ultimately fail. The notion that national (or even regional) governments in the developing countries can effectively manage local resources is largely without empirical (historical) support.[16]

An African ecologist supports this approach to the field of nature conservation:

> A basic flaw in our philosophy to date has been to assume that a powerful agency could carry out the necessary conservation for the nation; in the long run, conservation will only work when each community has a direct stake in managing the resource and justly benefitting from its activities.[17]

Certainly such a decentralized approach is logical. We trust the wisdom of bureaucrats in so few areas of our existence that it is nonsensical to trust them with the task of nature protection.

If we are to pursue more widespread and effective conservation through local community integration and control, it will likely be unavoidable to use such questionable terms as benefit, management, and even resource. We can talk about nature containing resources which humans can manage and derive benefit from without meaning exploitation by the Western technocratic juggernaut. Even John Muir, one of the United States' greatest preservationists, developed a concept of "righteous management." This approach was consistent with Taoist philosophy and ways of life wherein human communities fit in with the large cycles of nature. It was, of course, eclipsed (with the help of laissez-faire capitalism) by Gifford Pinchot's scientific management for improved exploitation. Pinchot's concept of management is still being praised in the World Conservation Strategy.

Pinchot's concept should not be regarded as the only concept of natural resource management. All societies manage their natural resources. The key question is not whether this management is being done, but who are the managers and what are their aims. The priorities of a corporate resource manager in a laissez-faire capitalist society are profoundly different from a wild vegetable forager in a subsistence community. The disastrous Western ideology of nature as a resource bears little resemblance to the understanding of nature as a resource maintained by a subsistence community whose religious and social structure is built

around sustaining their use of limited resources.

Sceptics might wonder whether non-Western approaches to nature and resources are any less destructive than ours. Some may not be less destructive, but there is little question that many are. The great problem is that the Western approach is oozing rapidly across the globe, often with the support of "nature" organizations such as the WWF. This is starkly illustrated in the World Conservation Strategy where the authors actually managed to juxtapose the following two priority requirements: "9. Allocate timber concessions with care and manage them to high standards; 10. Limit firewood consumption to sustainable levels."[18] Western-oriented exploitation of timber has often led to resistance by local people. The Chipko movement in the Himalayas is a particularly well-known example of local resistance to Western-style exploitation. In innumerable subsistence communities active conservation of natural resources is the only shield between themselves and abject misery.

'Sense of place' is crucial to effective community-controlled nature conservation. In our suburban society, a passion for one's home area is an incomprehensible concept, but it is not in many 'less-developed' societies. Referring to Africa, one scholar states:

> Land, to traditional societies, is not just Real Estate. It is part of an animate entity, it is host to the spirits of the dead, and the origin of the clan is intimately bound up with the origin of the land which they hold in trust. Traditional societies cannot understand how people can sell land or allow it to be alienated, for example, for national parks.[19]

A Maasi elder, during the struggle for control over Tanzania's Ngorongoro Conservation Authority stated:

> This is our homeland, this is where we belong. No matter what happens, even if nothing changes for the better, whether we are allowed to cultivate or not and even if we have to starve and suffer, this is where we want to stay.[20]

Such attachment to the land is a passion which Western conservationists could only dream about encountering in the "developed" world.

Conservation of the periphery by the inhabitants of the periphery is an approach which evidently unnerves our political system. This is likely because it implies peripheral control of resources over which the metropole intends to maintain control. Although the local people's voice always has undeniable legitimacy, it is often ignored, unheard, or actively distorted. Notions of local control are largely omitted from the World Conservation Strategy, which prefers such concepts as "global resource management." In rural areas of the less-industrialized world, indigenous concepts of conservation will undoubtedly challenge our concepts of conservation, just as our structures for conservation have so commonly challenged theirs.

The concept of preservation versus exploitation is too simplistic and dichotomous to have widespread use in guiding our human relationship with wild nature. We live in a complex, ambiguous world, yet too often seek to escape this ambiguity and draw firm, scientific lines to represent the world. This pervasiveness of ambiguity has implications for the unquestionable need for preservation of some areas, and locally-controlled conservation in others. As with so many fields where we attempt to draw firm boundaries, context is crucial; North American desires for preservation or approaches to conservation do not necessarily have roles in the protection of nature in the less-industrialized world. Even more important than the relative merits of these concepts, however, is the crucial issue of who is ultimately controlling the use or preservation of nature. Only when the regional, national, and international periphery gain greater control over the nature which surrounds them will either preservation or conservation have the opportunity to reveal its potential.

Notes:

1. T. Ranger, "Whose Heritage is it?" **Journal of Southern African Studies** (1989), p. 50.

2. Ibid.

3. R. Bell, **Conservation and Wildlife Management in Africa** (Washington: Peace Corps, 1984), p. 100.

4. Roderick Nash, **Wilderness and the American Mind** (New Haven, Conn.: Yale University Press, 1982), p. 200.

5. S. Marks, **The Imperial Lion: The Human Dimension in Wildlife Conservation of Central Africa** (Boulder, Colorado: Westview Press, 1984), p. 50.

6. J. Mackinnon, **Managing Protected Areas in the Tropics** (Gland: IUCN and Natural Resources, 1986), p. 97.

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8. Ramachandra Guha, "Radical American Environmentalism and Wilderness Preservation: A Third World Critique," in **Environmental Ethics**, 11:1 (Spring 1989), pp. 78-79.

9. Ibid., p. 76.

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11. John Livingston, **The Fallacy of Wildlife Conservation**

(Toronto: McLelland and Stewart, 1982), p. 20.

12. Thomas Birch, "The Incarceration of Wildness: Wilderness Areas as Prisons," **Environmental Ethics**, 12:1 (Spring 1990), p. 4.

13. Livingston, p. 40.

14. Rowan Martin, quoted in Bell, p. 15.

15. IUCN, **World Conservation Strategy** (Gland: IUCN, 1980), Section 13.

16. Bromley and Cernea 1989, quoted in Rogers, Ray, **Conservation and Development: The Case of Canada's East Coast Fishery** (Unpublished Masters Thesis, 1991) p. 24.

17. Martin, in Bell, p. 283.

18. IUCN, Section 7.

19. Bell, p. 214.

20. Arhem, pp. 200-201.

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MY MOTHER: AN UNWRITTEN ENVIRONMENTAL EDUCATION CURRICULUM

by Sinith Sitthiraksa

My mother gets up in the early morning and works in her garden. It is also our in-house pharmacy.

This is my 75-year-old mother.
She has never applied for a job in her life.
She has never had a resume.
If she had one, she would probably write only a short one-sentence resume: a housewife for 58 years.

My Mother and Me and My Mother and Trees

One day last winter, my classmates and I had a deep and broad discussion on the topic of environmental education curriculum.[1] As the only student from Thailand in the class, I was surprised to see that many of the colourful curriculum guidebooks provided for Canadian students were designed to *teach the children here how to touch, to hug and to kiss the trees.*

Why is this subject and activity being taught?

What's wrong with the relationship between nature and human beings here?

A planting tip: banana trees like recently burnt soil and freshly cut green grass. (Drawing by Ann S. Walker, International Women's Tribune Centre.)

This is something very strange and unusual compared to my own experiences. I have grown up with nature always around me. At my house in Bangkok, just stepping into the backyard I can pick up any kind of fruit I like: papaya, mango, jackfruit, guava, banana, sugar apple and rose apple, etc. It is my mother's place. It is because of her that I still experience nature as alive inside of me.

"Banana-trees need burning soil and green grass as fertilizer." That is what she had learned from her grandfather. Her plump and healthy banana-trees are growing day by day, night by night. What a tree of life! My Mother never buys aluminum foil or plastic wrap. She uses banana leaves and string made from the dry banana trunk. There have also been the many different kinds of nature toys that she had made for me from the banana tree when I was young.

Her other magic plants are bamboo and coconut. We use bamboo shoots and coconut milk for cooking. My Mother also makes a ruler, rake, broom and fruit picking utilities from those plants. Burning coconut husk is a natural insect repellant that keeps mosquitoes away.

Next, let's see what she has in her kitchen garden: lemon grass, basil, ginger, galingale, chili and pumpkin, etc. These herbs are not only used as ingredients in cooking but also as multi-purpose in-house medicines, i.e., lime and salt for coughs and sore throat, tamarind leaves and red onions in boiling water as a cold treatment.

Bit by bit, piece by piece, my mother collects old bamboo branches, rotten wood and coconut shells to use as her fuel wood. She dries her fish and chili in the sun and during the rainy season she stores rain water in jars for drinking.

It is ironic that after travelling 10,000 miles to study many new environmental subjects with many new technical terms (i.e., *reduce-reuse-recycle, sustainable development, resource management, energy conservation, indigenous knowledge and ecofeminism*), that all along this new knowledge was already taught to me, on a practical level, year by year, by my Mother.

She is my first environmental education teacher who taught me the concepts and practices of environmental education through her unwritten environmental education curriculum.

Her prescription for a cold:
a handful of tamarind leaves,
some red onions, and
boiling water.
Direction: inhale and exhale the steam, take a bath and put the concoction on your head. (Drawing by Ann S. Walker, International Women's Tribune Centre.)

There is no need to pay for "hydro" as she often uses her in-house energy resources. The light wood, which produces heavy smoke, is used to start the fire. Later, the hard wood is put in as the main firewood. That is her indigenous knowledge on fuel woods. NOTE: Her copper rice cooker on the stove is 58 years old !!!!!

In doing dishes, there is no need for dishwashing liquid and scrub pad. The coconut husk and ash (in a small coconut-shell container; can you see it?)serve as her natural diswashing utilities.

Women's housework is invisible and unpaid. What is worse is she has to do 2 or 3 things at the same time. While waiting for her rice to boil, she sometimes sharpens her knives.

My Mother and Her Family's Folklore

"What is the most significant moment in the life of your mother?" Have you ever sat down knee-to-knee and asked your mother some of these questions?

- What are her childhood and teenage memories?
- How was the relationship with her husband after getting married?
- When and what were the biggest changes in her life? If she could, what kinds of changes would she want to make in her life?
- What activities please her most? How much time can she afford to spend on them?
- How does she want to spend the rest of her life?

If we ask ourselves what we know about our own mother, we may be surprised to find that the answer seems to be both everything and nothing at the same time. Influenced by "Women's Stories/Women's Lives: An Oral History/Photography Workshop," conducted by the oral historian and women's activist, Cindy Cohen, I slowly started to reflect on my mother's folklore with very mixed feelings: "It's too personal and too strange for the Canadian Community. Who will benefit? What can they learn from a third-world Mom's life story?" However, David Smiley, a Toronto social photographer, thought differently. He valued it as a critical "cross-cultural, cross-national and cross-generational oral history and photography project: "Use whatever tools and channels you can: overseas

Drying fish when the sun shines on her bamboo basket.

The bamboo tree is used in making a fruit-picker tool. These are her natural products: a mop-handle and a rake made of bamboo.

How many plastic bags did you use during these past ten years? It was around 3650 bags, if you used 1 per day. My mother has sustainable bags... Look at her basket collection... The biggest one on the right has been used for almost 10 years.

calls, fax or even computer networking to communicate to Thailand to get the project done!"

For him, it seems like the story of 'regular' or 'disempowered' people are important as a form of personal expression, a perspective from which to view historical change, and a point of departure for understanding and transforming relationships.
There was much kind support from my classmates, as they helped me brainstorm leading questions to guide the interviews with my Mother. I phoned home many times to complete the interview process. My relatives helped by taking current photographs and reproducing the historical ones from family albums.

It became a family reunion. My eldest sister, who is 18 years younger than my Mother, recounted some of her own past experiences of my Mother, some of which go as far back as the Second World War. My other sisters helped by displaying my Mom's basket collection and recording her lullaby songs. What happened as the process was going on reminded me of what I have learned in oral history workshop; that is, as Cindy Cohen said, not only do "people come to value their own experiences and perspectives when their oral expression is listened to, recorded and presented with dignity," but the process and outcome is also valued by those who are intimately close to them.

The Last Moment

It is Tuesday, May 7, 1991. While I am waiting for the last set of pictures from Thailand, I look back and ask myself, what have I learned from the course "Photography for Social Change" and from developing this final project as part of the course's requirements. Paradoxically, the answer is so simple and so complicated at the same time. Firstly, in learning about my Mother's life, I have been given the chance to find my roots. Secondly, I learned more about how "to write" something down from the "unwritten world." Thirdly, it gave me the understanding of what my instructor has said: "a shared understanding of the past and present is critical in order for communities to work together to shape their future."

How can I end this project without saying something to my Mother personally. She is going to be 75 on May 11, one day before the opening of the exhibition.

HAPPY BIRTHDAY MOTHER!

I have worked on this display intentionally as a birthday card for my Mom; the biggest card that I have ever made.

"I wish you could see it and I'm looking forward to celebrating your 100-year-old birthday, Mom!"

Notes:

1. This photo-story was part of my final project for "Environmental Education" at York University and "Photography for Social Change: A Hands-On Course for Community Workers" offered by the Moment Project in winter 1991.

As the goal of the photography course was to focus on exploring the uses of photography in community action, this project was designed and developed collaboratively with other community workers' photographic projects to exhibit their current work and address issues such as homelessness, native health, domestic workers, immigrant and refugee women etc. in order to support work for social change. All exhibits were presented at the Mayworks: 6th Annual Festival of Working People and the Arts, May 12-26, 1991 in Toronto.

Later, "My Mother" Project travelled to many Women, Environment and Development conferences in North America, Japan, Thailand and the Global Forum '92 in Rio de Janeiro.

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It is said, "if you educate a man, you educate a person; if you educate a woman, you educate the whole family." Her long-lived teaching tool, a slate, was used and reused and reused again and again from her first to sixth child.

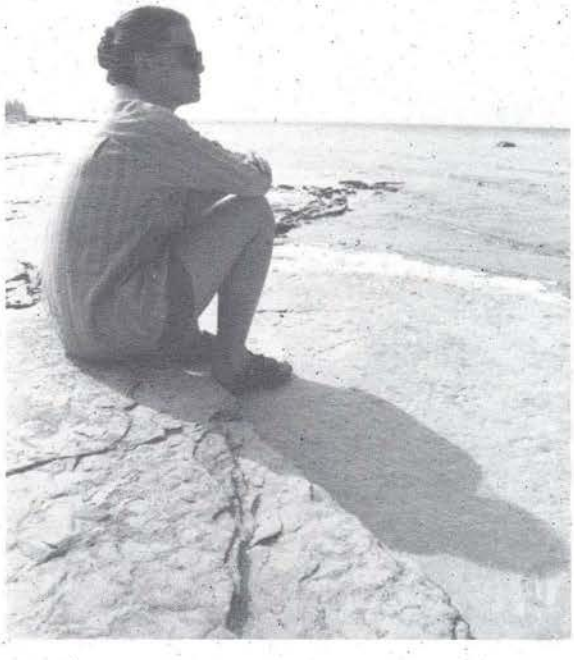
I wish she would let me write her resume. If I could I would list her experiences as follows: gardener, agriculturalist, cook, entertainer, tool & toy inventor and maker, traditional doctor, resources manager, energy conservationist, food scientist, home economist, teacher, sustainable developer, ecologist and .....environmentalist.

A STRAIGHTFORWARD PHILOSOPHICAL THOUGHT ABOUT VIRTUAL REALITY AND ENVIRONMENTALISM

by Brent Wood

The world, not the planet, is becoming virtual.

Our idea of 'the planet' is already a virtual one, as the currently multiplying photos of the globe from space wordlessly attest. When we try to conceive of a 'global system' of any kind, our imaginations prove inadequate to the task. Hence the sublime experience aroused when we attempt to contemplate our earth in its entirety in one of our more peaceful, less procedural moments, as when a young adult cries at the beach on a summer evening over the fate of humanity.



We use giant matrices to model ecological and economic 'systems.' We abstract them from measurement, we logic through their equations, and we attempt to interpret our 'results' by comparing them with our ever-more-virtual experience. We call this process practical reasoning and it is generally assumed that it has some sort of pragmatic validity. After all, it's obvious that something has to be done about the current 'state of the earth.'

Just as obviously, though, the destruction continues. To the extent that we know this to be true, we in Southern Ontario have gathered it as much from our own experiences driving the 401 and finding garbage in Algonquin Park as from televised and statistical portraits of Amazonian clear-cuts. We correlate this data and assume we are making headway into the headspace of 'thinking globally.' It appears to me that we can make this assumption only to the extent that our 'world' has become virtual.

Virtuality is technologically-induced illusion. The primary question to be answered is whether virtuality is simply representation in the guise of sensory immersion, or whether indeed it is something more. If it is simply representation, then we will be able to follow the path worn by those who study representation - the semioticians and the theorists of modernity - in order to discover the implications for the future of *Homo sapiens* in their terrestrial interactions. If it is something more, then a new field will be open in the theoretical database, and other questions posed: what, then, becomes of our modern conventions of communication and the common sense they engender, and how can we understand the forms 'common sense' might assume in the future? For all the seeming esoteric quality of these questions, they are concerned with a very practical issue--our conception of our home, and therefore our relationship with it.

Our understanding of the meaning of the term 'the world' has evolved over the centuries from one in which time had been a primary component to one in

which time is simply an imposed dimension of measurement. Thus today 'the world' is immediate only. We have come to accept radical social and geographical change by flattening our concept of 'the world' such that its integrity is strictly Euclidian. Post-Euclidian models of the universe carry little currency outside theoretical practice, and our attempt to retain stability in our idea of home by compressing our world in time and expanding it in breadth, is likely one reason for this lack of currency.

As we tell ourselves to 'think globally,' we believe we have stretched the boundaries of our minds beyond our own home-work-and-home-again route. We do so, however, with barely the slightest clue that things might otherwise have been different. The conception of duration as the central motion of life, and of memory as inherited wisdom, have been displaced by the conception of duration as the distance between the beginning and ending of an arbitrarily defined event and of memory as what helps us pass exams and win at Trivial Pursuit. The North American Native practice of making decisions based on a world the duration of which is seven generations into the future, an idea to which it has been popular among environmentalists to refer, serves as nothing more than another number in our mental construction of functions based on elapsed time which highlights our conceptual inadequacy by providing yet another sublime experience for us to cherish.

The intense broadening of the world in Euclidian space, however, is obviously not a cultural worldliness born of active living in distant spaces or cultures. It does not seem a stretch to suggest that a North American of today has typically less first-hand knowledge of her or his physical environment that any of her or his ancestors did of theirs. When we imagine what it is to be a citizen of Canada, let alone a citizen of the world, that image-concept is formed from a hybrid of electronically and personally gathered experience. How could it be otherwise? Electronic eyes and ears are imperative to our 'understanding' of the world today. It would be irresponsible for us to ignore the images presented to us of places outside our physical reach. And so our image-banks have grown so that we can stitch together a mental simulation of a photograph of the world as it is - now, or what we imagine to be now.

Of course, there is no such thing as now. The flattening of the world is the root of a tension between a limiting conception and the unlimited reality. It is gathering momentum. We desire to limit our micro-worlds such that they can be experienced without reference to the fearful not-yet-to-be or the still more fearful once-was. The creation of limited worlds is the ever-sharpening focus of the application of technology to everyday life and to science. Our shopping malls are micro-worlds limited in thought, material and physical scope. So too are the SkyDome, automobiles, laboratory experiments, audio, video, Whitby housing tracts and computer simulations. We accept limited worlds because they are experiences we find manageable. We find the experiences they engender manageable because they spare us the uncomfortable memory of the dead and the unimaginable world after our own death. Gradually, the importance of duration has been eclipsed by a technologically-expanded Euclidian present, and we have barely noticed.

The day-to-day components of life are thus one-by-one becoming virtual. Eventually the intermingling of virtualities brings about the illusory perception of an infinite reality. The perception of a virtual infinity is akin to the vanishing point in a landscape painting, or the effect of motion in film, where the speed of changing images creates the illusion of life. The mixing of these effects is the basis for what we call Virtual Reality. It is also, on a large scale, the basis of the virtualization of the world.

The motion of virtuality-machines is machine-operation-at-a-distance. The wave energy transformed from one end of any defined system to another increases in unpredictability with transformations experienced. Even when humans manipulate equipment themselves, the sensory feedback as it travels from one end (the motivating end of the procedure) to the other (the motivated human end) becomes increasingly illusory itself as unpredictability rises. Thus, neither what we predict, based on precedent, is going to be the result of a technological intervention nor what we perceive to actually be the results of the same intervention are reliable reporters of whatever actual effect there might be. Only through indirect means can we get more accurate reporting.

This observation assumes importance when we attempt to create a limited, controlled future space for ourselves as do the back-casters. We have become so inured to our artificial patchwork of abstract space-without-time that we begin to imagine that the element of change that is always present in the infinite universe is itself merely something to be minimized and managed as part of the greater limitation process. In the back-casting process, a scenario is imagined by reshuffling our abstraction-patches into a favoured pattern, then logically computing the operations required to control physical variance over time such that the imagined scenario actually arises. The process is not new, but its application to single-future-creation for groups and systems whose defined boundaries are far beyond the scope of human conception is. The illusory nature of the baseline world-picture and the results of the mechanical operations prescribed by such a process are discounted with a dangerously naive confidence.

On the other end of the spectrum, it has long

been apparent that art can be brought into being through the exploitation of chance. In fact, chance can be the very medium of art if the artist is sensitized to the unpredictability function of the tools applied. While many point to Cage's compositions as the highest example of this process, all active art in fact grapples with chance to some degree in its workings. The object of the painting, says the painter, is not to reproduce the

must therefore be directed into itself through indirect exploration, to clarify its own character, rather than outward to expand the knowledge base for further virtualizing intervention.

The virtualization of the world includes the virtualization of humans. As humans become virtualized, the inter-human relationship becomes virtualized, on every level from our interior relations

visible subject but to suggest its invisible truth. The workings of the image in the minds of its viewers long after the initial viewing is the essence of the painting, and its combining and re-combining with other images from the future and the past constitute an aleatory operation. The insights received from such a process are tribute to the artists' intuitive grappling with the unpredictability of mediated human interaction. Chance is thus a viable indirect means of discovery.

It is of the utmost importance that the investigations of both the scientist and the artist take into account the rising virtual content in the life-experience of humans. As virtual content increases, art, if it is to continue to be rooted in the indirect revelation of truth, must engage with the virtual without hesitation. The art of virtualization must therefore lie in the skilful and intuitive manipulation of chance in the application of the technology to human. The most effective virtual art will further manipulate the relationship of the interaction between human and virtual world and the interaction between the human and virtualization process at large. Effective theory is therefore also art. If there is to be any human knowledge of the virtualization process, our search for truth through investigative sciences

to our relations with intimates to familial relationships to tribal to universal. It is obvious that today the grouping of actual discrete human beings is accomplished almost always through technological intervention. The evolution of the cyborg is therefore the end of the notion of individual will. Televisual reality-production and the resultant inter-human relationship is the most obvious, but far from the only, example of this. Even the use of the medium to mitigate against its own effects is only minimally effective, since the medium's limitations are its very essence.

Our idea of planet is a virtual one and has been since its modern inception. In many ways, the disjunction of planet, world and time that has occurred through technological sensing and scientific reason are more illusory than the medieval view they supplanted. We see the planet as we do only as a result of technology. That technology includes mechanical eyes, ears, fingers, nerves, central processing units and display screens. Our idea of the planet is thus more the machines' idea of the planet than a human idea. It is acceptable mechanically and it is made acceptable to us for certain purposes. The inadequacy of our reflective imaginations to conceive a world-system is indicative

of the operations of a predisposition of such an idea. The idea of a planetary biosystem is a virtual one. Our idea of the planet is therefore the idea held by a cyborg.

A pivotal problem now arises for environmental discourse and activism. If machines are an integral part of the evolution of terrestrial life, in terms of evolutionary theory, our idea of the planet ought to be, therefore, for the best of the machine aspect of the social cyborg. If machines are not part of the evolution of terrestrial life, or if the notion is utterly meaningless in reality and evolutionary theory still has some merit, then our idea of the planet is either damaging to the biotic base of life or is a part and manifestation of that biotic base. It is impossible to know whether the technologically-apparent destabilization of this biosystem is real or not, or if it is, what control human will might have on it.

If machines are in fact an integral part of the evolution of terrestrial life, we will have to face the fact that technology may be in the business of actively altering the human to become at one with technology itself. It is not difficult to look about everyday life in Southern Ontario and understand this to be so. If the individual now only has meaning in a technologically-mediated universal decision-making environment only as an object of technology, then all appeals to human suffering, present or future, will henceforth be pointless as motivation for intervention, human or technological, in the technological degradation of the known biotic system.

Addressing this problem with something other than virtual image-concepts or blind faith promises to be a difficult task indeed. Following the earlier suggestion of this essay, it appears that any applicable intuition must be arrived at obliquely, through an artful application of science. I would like to conclude this lengthy but humble observation with a series of questions to be considered in such an application.

1. Is what we think of as biotic the sufficient root of virtuality, or does virtuality precede biotic development in some form? That is, is virtuality an extension of communication in the sense of Derrida's notion of difference?

Or, in two parts,

2. Does biotic life contain the seeds of consciousness? and,
3. Does consciousness contain the seeds of virtuality?
4. Is the non-biotic the sufficient root of the biotic, or do other dimensions, aspects, of the world pre-exist life?
5. If the spirit world can be said to exist and have a relationship with the real world, then what is the relationship between it and the virtual world?[1]

Notes:

1. While no citations have been explicitly made in the above essay, the following incomplete "bibliography" may be useful to anyone interested in the ideas presented.

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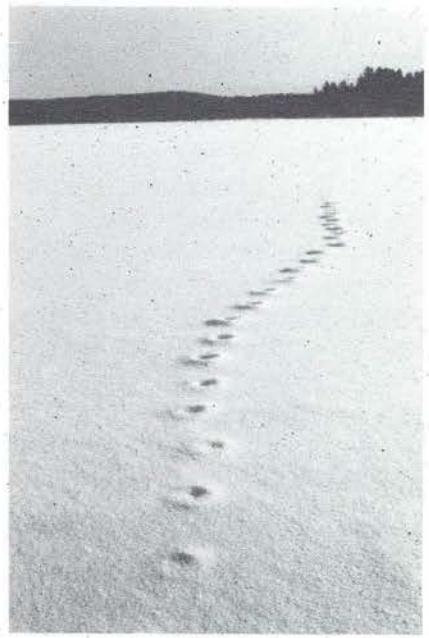

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Raspberry Canes

There was a white field
I sped by each day
Jerked my head to see
but didn't stop

The phosphorescent raspberry canes a sign that this is not a green and grey and brown and white world.

I lie
desperate lies
that I don't want to be
like women
I do want you here
I want babies
5 babies
I want to be at rest
At peace with the motion of my blood
With all the lies
I've ever told

I can't believe
it comes to an end
like this
just like my mother said.

I asked her how she could stop loving
the day after he'd left

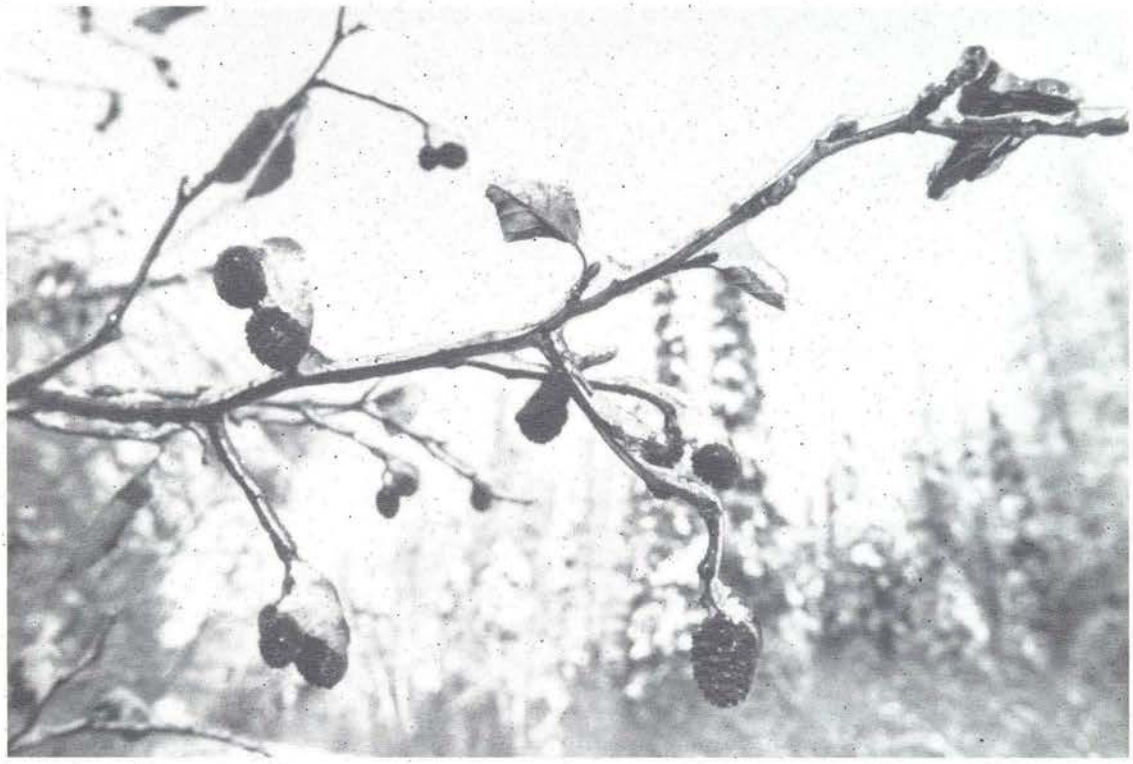
She said you can't go on you know
if it's not returned

It would kill you
if you believed
that's all there was
lining the bark

smoothing the snow with wind

If you believed
it was the only direction
in which to bend.

Gillian Austin



"CAPITALIZING ON THE WEALTH BURIED DEEP WITHIN LIVING MATTER,"[1] OR POLITICS AND PATENTS

by Jane Horsley

Intellectual property rights have become the mechanism of choice for "capitalizing on the wealth buried deep within living matter" by providing patents and copyrights in the products and processes of biotechnology. The most infamous of these developments was the U.S. Patent for the "Transgenic Mouse" - a mouse genetically engineered for a particular oncogene, "enabling it to get cancer on demand." That patent was granted in 1988, but the legal developments providing for such a patent had begun in the early 1980's in the United States, and have been influencing the development of Canadian law since that time. The legal recognition of intellectual property rights in biotechnology has become increasingly controversial. There have been several court challenges by the U.S. Foundation for Economic Trends to planned experiments involving release of genetically engineered organisms into the 'environment'. Public discussion and debate have followed the proposal and eventual adoption of a 'Plant Breeder's Rights' Bill here in Canada. The criticisms of biotechnology come from a wide variety of sources, and cover a range of concerns. These concerns include social and political issues such as the threat of agribusiness, unfairness and injustice in international development, and workplace safety.

There are also other, more abstract concerns about biotechnology as the latest manifestation of resourcism, as well as the concerns of so-called "biofundamentalists" about the possible moral, spiritual, and ecological implications of biotechnology. One U.N. official expressed a fear that "a bunch of patent lawyers were trying to rewrite Genesis."[2] Perhaps the national and international intellectual property lawyers are not trying to rewrite Genesis but rather trying to carry the part about "man's dominion" to its logical extension, to include the genetic basis of life as part of "man's dominion." Biotechnology, for many environmentalists, seems to represent the epitome of anthropocentric resourcism, of the view that "all of wild nature is a herd, a flock, a crop to be manipulated and controlled in the public, national and human interest."[3] This description seems particularly apt for so-called "molecular pharming,", in which universities and companies develop animals for medical research "that are genetically programmed to suffer."[4]

There are two different types of criticism, then, that have been raised against biotechnology -- anthropocentric ones, and non-anthropocentric (or at least not exclusively anthropocentric) ones. The former emphasize concerns about justice between humans, about the distribution and allocation of genetic resources. The latter emphasize concerns about relations between humans and nature, and about patenting organisms as an "affront to the sacred meaning of life."[5] It is important to situate the criticisms by providing an account of biotechnology and recent legal developments in this area.

Biotechnology refers to "techniques which involve the use and manipulation of living organisms and which can be commercially exploited."[6] Effectively, biotechnology consists of techniques that rely on living organisms as the means of production. Examples of biotechnology techniques include: cloning and fermentation, embryo transfer, cell fusion, and recombinant DNA technology, or genetic engineering. The most controversial experiments, and the ones which attract the most public scrutiny, have been the recombinant DNA ones. Examples of these experiments include: the attempt to transfer blue colouring from petunias into roses to produce blue coloured roses, the attempt to transfer fish genes into soybean varieties to produce increased cold tolerance, the introduction of human growth hormone into pigs to in-

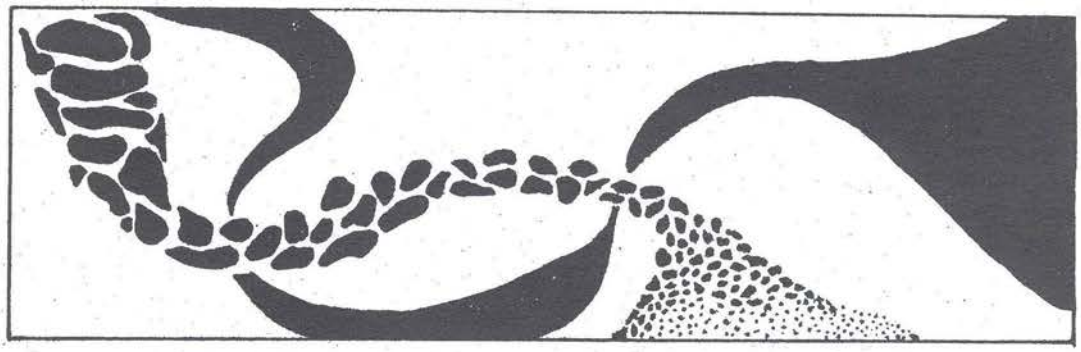
crease size which leads (unintentionally) to arthritis and immune system problems.[7] The technology has also been used in the attempt to transfer a hamster gene to a tobacco plant in order to produce plants that would remove heavy metals from soils,[8] and in the production of microbes designed to consume toxic waste products; both of which would be genetically engineered pollution control organisms. Cell fusion has been used to combine sheep and goat cells, producing a "geep" organism.

Property rights are entitlements to own, possess or dispose of objects characterized as property, and the obligations associated with such a right. Intellectual property law provides legal recognition for property rights to inventions, certain modifications of existing products, and 'products of the mind', or ideas. A patent is an exclusive right to exploit the subject matter of the patent for profit that is legally enforceable for a specified period of time against any unauthorized use by others. A patent is a monopoly -- it entitles the owner of the patent to monopolize the use of, and to profit from, an invention. Patents are intended to assist the progress of scientific and technological development by providing inventors with the prospect of exclusive property rights to exploit their inventions for a set period of time. Patents are meant to function as an incentive for the investment of time and money required by inventors to produce products.

The criteria that have to be met for a patent to be granted are as follows: the invention must be new (not known, disclosed, or used before); it must involve a genuine inventive step (it cannot be obvious to those with ordinary skill in the field in question); and it must be useful, which means in effect that it must be recognized or perceived to embody some economic potential. In addition, the invention must fall within a defined class of patentable subject matter. This is one place where controversy has arisen about biotechnology.

Genes are products of nature, and patents cannot be granted for 'mere' products of nature. An inventor cannot receive a patent for something already in the public domain, such as things that simply occur in nature. It is necessary that there have been an alteration of nature for there to be an invention. Yet, what is to constitute an appropriate alteration is continually being decided by the patent offices and courts. If a gene has been isolated and purified, and a use characterized, then a patent can now be granted under U.S. law, and probably soon under Canadian law as well. Recently, the U.S. Federal Government, specifically the National Institute of Health, has submitted applications to the U.S. Patent Office for patents on hundreds of human genes, genes which are currently being mapped as part of the Human Genome Project.[9] The U.S. Government scientists on the Genome Project have yet to discover uses for the genes they want to patent, because they don't even know yet what role is played by these genes that they have simply located. Still, they are rushing ahead on the patent applications, because of fears of losing the 'race'.

There are almost two hundred animal patent applications awaiting processing in the United States Patent and Trademark Office, which had temporarily stopped granting animal patents but has recently resumed the practice.[10] The first animal patent in the world was given to Harvard University researchers for a gene which predisposes the carrier mouse to develop cancer. Other animal patent "inventions" awaiting patents are genetically engineered mice which develop AIDS, leukemia, something akin to Alzheimer's disease, or an enlarged prostate. There are also applications for genetically altered pigs "that produce human hemoglobin for use in blood substitutes," and for a transgenic bull which sires cows "whose milk contains lactoferin, a protein unique to human mother's milk that inhibits bacteria growth and helps a baby retain iron."[11] The most recent development of biotechnology involves the genetic alteration of pigs so that their organs can be transplanted into humans without being rejected by the human immune system.[12]



The United States Supreme Court effectively paved the way for these kind of patent applications in the 1980 decision of *Diamond v. Chakrabarty*. In that decision the court had to decide whether an invention should continue to be excluded from patentability

simply because it consisted of living organisms. Chakrabarty invented a process to transfer oil degrading plasmids into bacteria, and then applied for a patent on the process and the altered bacteria.[13] Chakrabarty's discovery amounted to a "pollution eating" organism.

Prior to that case, there had been a longstanding doctrine in intellectual property law that lifeforms and living matter were not patentable. The U.S. had passed a special law, the Plant Patent Act, in 1930, to provide monopolies for asexually produced fruits, trees and ornamentals.[14] Other than plants, no living matter was deemed patentable until the Supreme Court decided in the Chakrabarty case that the Congress intended patentable subject matter to include "anything under the sun that is made by man."[15] In Canada, the patent office had continued until recently to maintain the distinction between lifeforms (non-patentable) and non living matter (patentable).[16] New developments in biotechnology which are now deemed to be patentable include yeasts, molds, fungi, bacteria, algae, viruses, germ plasm, cell lines, seed lineages, microbes and microorganisms.

Given that patents are supposed to be rewards for 'useful' products, and thus presumably to be 'beneficial' for society, it is surprising that they are difficult to justify, even on economic grounds. In 1960, Canada's Isley Royal Commission found that there is no economic evidence that the patent system is justifiable, and then advised against the extension of patents to plants[17] (as had been done in the United States). The economic rationale for patents is that patents are meant to provide incentives for invention. Yet, before the Supreme Court even decided the Chakrabarty case there were many biotechnology researchers and corporations working on other genetic engineering products. These products were being developed without any assurance of economic reward in the form of biotechnology patents.

The argument that patents should be granted to reward 'business as usual' assumes that 'business as usual' is fine. This assumption is not accepted by many of the critics of biotechnology, particularly those critics whose objections are motivated by political economy issues. It seems clear that biotechnology patents will be favoured by big business - more than half of all patents (60%) of any kind are granted to corporations, and the rates of involvement by corporations in biotechnology research will mean that the proportion will be even higher for biotechnology patents. Chakrabarty was working with General Electric when he applied for the bacterium patent, and Du Pont was involved with Harvard's application for the Transgenic Mouse patent. In Canada, about 95% of patents are granted to what are known as foreign applicants (companies that are not Canadian owned). This is no less likely to be the case in the biotechnology field.

The main area of industry in which critics fear the effects of biotechnology and related intellectual property protection is in the area of agriculture. There are two related problems: the decline of diversity, and the production of varieties designed to serve the interests of corporations rather than the needs of the public. The development of *pesticide* resistant plants rather than *pest* resistant plants is an example of the latter. The former problem, the concern for diversity, is related to the feasibility of sustainable agriculture. The argument is often made that intellectual property protection for agricultural biotechnology will bring "innova-

tion and creativity to plant breeding rather than uniformity and chemical dependence."[18] Many critics argue that this is simply a myth. Sustainable agriculture would be better promoted, critics say, by "land reform, support for regional autonomy and democracy, policies that strengthen local markets, removal of subsidies that favor global markets, and a willingness to learn from non-industrial people(s)" than by biotechnology, which requires a complex industrial infrastructure.[19]

Pat Mooney points out that ninety-five percent of human nutrition is derived from only thirty plants, and that three crops alone account for over seventy-five percent of human cereal consumption.[20] The

interdependence of food sources and supplies means that protecting diversity is crucial. If monoculture is increasingly the way of agricultural production, then increasing vulnerability to pests and diseases is unavoidable. The limited genetic base of the products controlled by multinational agribusiness corporations provides little chance for pest and disease resistance. New material is always needed to respond to "constantly mutating pests and pathogens."[21] It is important to preserve as many strains, seed lines, and varieties as possible. Subsistence farmers in nonindustrialized regions of the world have been cultivating crops for thousands of years, and have developed a remarkable range of crop variability.[22]

The distribution of resources and rewards between gene poor, industrialized countries, and gene rich, non-industrialized countries, is also a source of concern for critics of biotechnology. It is to be manifestly unfair that "developing countries have been required to pay royalties" on intellectual property rights for "varieties, the germplasm of which originated within their own boundaries."[23] Multinational corporations based in industrialized countries obtain germplasm from non-industrialized countries for free, or next to free, and then charge those same countries for the resulting products. Genetic and cultural information is extracted from the 'Third World' and then processed in the academic and corporate laboratories of the industrialized countries. Scientists collect the information as if it was the common heritage of humanity, but then use it to produce new commodities for private profit from the value added.[24] There is no recognition that value already exists in the materials collected. The legal protection of those materials is also important for preserving genetic and cultural diversity.

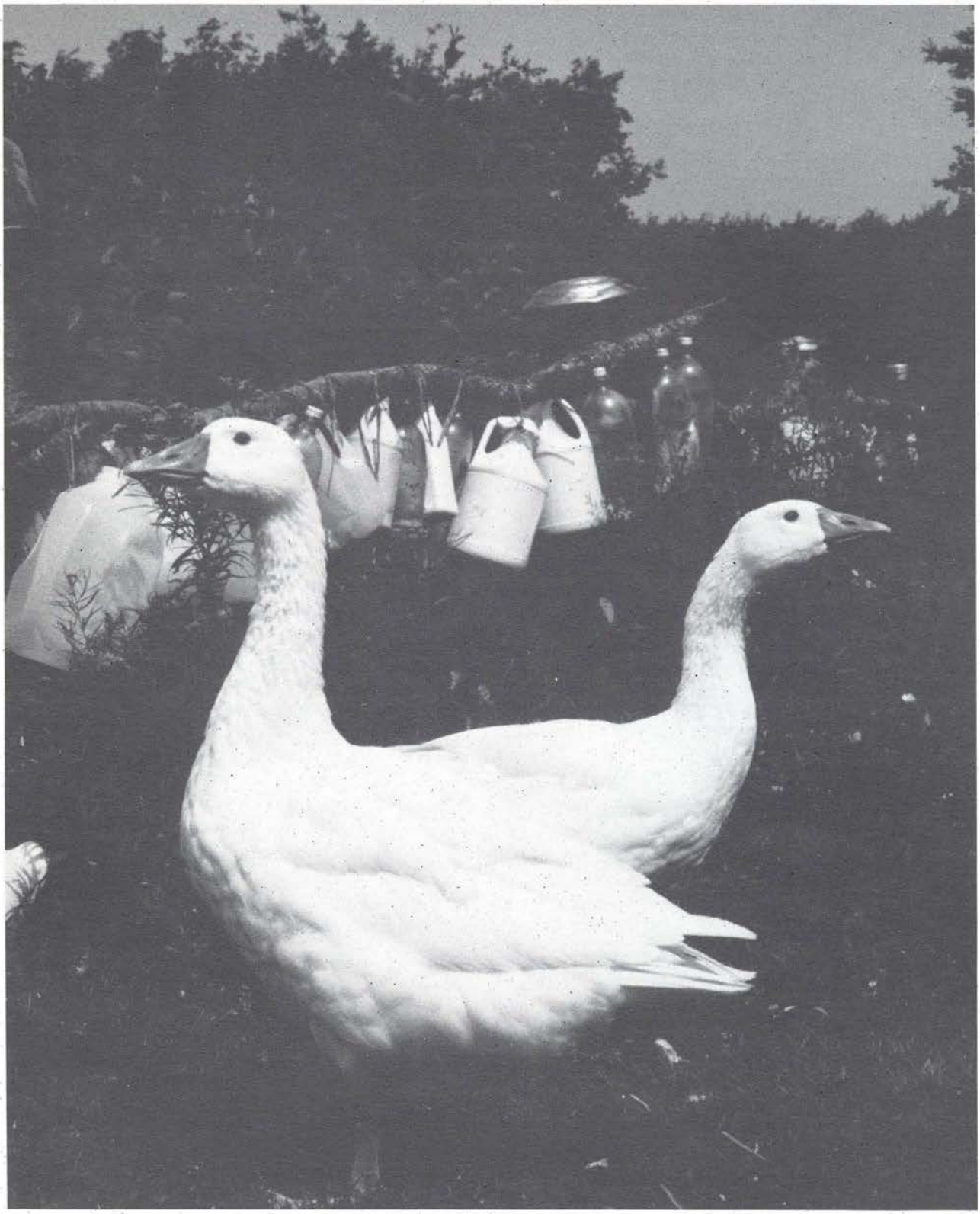
The need to address the injustice in the current system has led some people to argue for the adoption and assertion of intellectual property rights by native peoples in non-industrialized countries. The objective of claiming intellectual property rights would be to obtain some kind of "just compensation for indigenous knowledge,"[25] or some kind of compensation for peoples in tropical countries for the use of their plant genetic resources. This kind of proposal is aimed at ameliorating some of the injustice resulting from the present international distribution of resources, not at drastically altering it. It suggests extending the pool of recipients of intellectual property rights, but even that is likely to be strongly resisted by the beneficiaries of the current system.

The complaints about intellectual property rights in biotechnology that have been discussed thus far all address the political and economic conseqences. Another related concern is the risk factor. The full risks of genetic engineering, and especially of the release of genetically engineered organisms into the environment, are not known. Perhaps these risks could never be known. For environmentalists, this suggests a reason for caution, at the very least. The government in Ontario has evidenced concern about workplace safety issues involving biotechnology, and has recognized the need for regulation and public accountability in this area.[26] Yet, there are many, many unanswered and even unanswerable questions about current research and its long term effects.

The criticisms that have been discussed thus far all fall into the anthropocentric type of concerns about biotechnology, which are also resourcist. These anthropocentric concerns are quite consistent with the assumption "that society has the *right* to develop, exploit and control the environment, subject only to the *restrictions* and *regulations* that are imposed on the most unacceptable activity."[27] There is a common thread underlying these criticisms. That thread is that the problems with biotechnology have to do with *which* humans get to exploit nature, *when* they get to exploit nature, and for *whose benefit*. These concerns do not call into question the fundamental resourcism of biotechnology.

There is another critical perspective from which to register concern about biotechnology and patenting life forms -- one opposed to resourcism. From this alternative perspective, it is not sufficient to focus on the political economy of biotechnology -- the question of which humans get to exploit nature, when, and for whom. This perspective has been articulated by humanists environmentalists who have both been labelled by the popular press as"biofundamentalists."[28] The biofundamentalists have expressed concern about the potential ecological, moral, and spiritual consequences of genetic engineering. There are really two different strands of criticism which are lumped together under the same label. One of these is a version of anthropocentrism represented by humanists who primarily object to the application of genetic engineering to humans. The other is non-anthropocentric and represented by animal rights activists and some environmentalists.

Humanists are concerned about the disregard for the special status of humans, about the spiritual implications of the increasing commercialization of life. These critics claim that awarding property rights in biotechnology constitutes endorsement and encouragement of genetic engineering. This, they contend, is lamentable because it contributes to the increasing commercialization of life, and ultimately results in humans 'playing God' with evolution. Mechanisms that operate at the cellular level are identical in human and non-human organisms. Thus, if biotechnology patents are obtained for genetic material in animals, there is no reason not to obtain them for genetic mate-



rial in humans. Humanists fear that the commercialization of plant and animal life will initiate some slippery slope toward the commercialization of human life.

These critics would point to the recent applications by the U.S. Government for patents on genes located by researchers for the Human Genome Project as substantiation for their fears. Some of these critics may not object to biotechnology patents if genetic material from humans could not be patentable subject matter. Others of these critics may object to any biotechnology patents on genetic material, whether human or non-human, on the grounds that all life is sacred.

There are two different ways to characterize environmentalism -- an anthropocentric one and a non-anthropocentric one.[29] The anthropocentric, or human-interest oriented version, would identify concerns with biotechnology which would be significantly similar to those listed above. Thus, on one approach to environmentalism the problems with intellectual property in biotechnology include the threat to food crop diversity; the lack of recognition of, and renumeration for, indigenous knowledge; and the threat to worker safety and public health. Yet, to focus on these aspects of biotechnology, particularly under the guise of "environmentalism" is to perpetuate the dilemma that "environmentalism in its modern incarnation is not about nature but about people controlling nature."[30] Evernden points out where this trend leads: "[r]ather than defend wilderness, the new environmentalist defends the genetic diversity in wilderness which humans may someday need for the production of new crops."[31] Of course, it is precisely the concern for genetic diversity in human food sources that provides the impetus for the type of criticism discussed above.

The problem with this version of environmentalist discourse is what gets left out - namely, the concern for nature, for nature preservation, and for what has been called the "liberation of nature."[32] There have not been many attempts made yet to articulate a specific critique of biotechnology from the non-anthropocentric environmentalist perspective. It is only possible here to suggest what kind of approach would arise from such a perspective. One source of criticism derives from a general critique of the effects of technology. In many ways, this may be the most significant source of concern about biotechnology, yet it is the most difficult to articulate.

Biotechnology is simply an instance of technology; it is but one more example of the "dynamism of technology," the attempt to exert mastery over chance by exerting mastery over nature.[33] The concern of biofundamentalists is that biotechnology represents a stance towards nature that conceives of nature as mere 'standing reserve'. Intellectual property rights simply entrench the resourcist perspective, that all of nature exists as material for human 'invention' and 'use'. Further, biotechnology does not simply subject non-human nature to mastery. All of nature, human and non-human, is part of the same system of domination and exploitation. The "social construction of nature"[34] which underlies biotechnology is premised on the notion that nature, human and non-human, can be altered at will. The question needs to be asked, how is nature to be constructed and what kind of relationship between humans and non-humans does that construction represent.

The provision of intellectual property rights in biotechnology - as seen most acutely in the U.S. Government Human Genome patent applications and numerous animal patent applications - is but the most recent manifestation of the tendency to claim as human invention anything resulting from selection and breeding, or even simply from recognition of natural processes. Not just to claim them as inventions, but to attempt to profit from them at the expense of other humans and of non-human nature. If one thinks that all of nature, from the gene on up, is simply a source of resources for human use, then the problem with intellectual property rights in biotechnology is the distribution of ownership in those resources. The question then is: in whose interests is nature to be altered.[35] The problem with intellectual property rights in biotechnology from the perspective of anthropocentric resourcism is the system within which those property rights are granted.

The problem, however, from the perspective of non-anthropocentric, anti-resourcism is the construction of nature within which those property rights are granted. For this kind of environmentalism, it is difficult to imagine anything that is more exploitative of, or disrespectful to the integrity of, non-human beings than a patent on a genetic line producing cancer, or AIDS on demand in mice. So, what constitutes the injustice or the wrong in animal patents? The genetic engineering of the mouse in the first place, or the subsequent monopoly enabling the 'inventor' to profit from, and exclude others from, the use of the 'product'? There are two very different ways to answer this question, depending upon the position from which one asks it, or the context within which one situates it.

Notes:

1. This is the title of an article by John Woodley in the **Canadian Intellectual Property Review**, 2:1 (1985), p. 128.

2. Quote attributed to Food and Agriculture Organization Director of Forestry Dr. L.E. Huguet by Pat Roy Mooney, in"Genes, Seeds, Crops, and Patents and Politics," **Ecoforum**, 9:5 (1984), p. 1.

3. John Livingston, **The Fallacy of Wildlife Conservation** (Toronto: McClelland and Stewart, 1981), p. 26.

4. "U.S. Resumes Granting Patents on Genetically Altered Animals," **New York Times**, February 3, 1993, p. C5.

5. Jeremy Rifkin, **New York Times**, February 3, 1993, p. C5.

6. Cary Fowler, Eva Lachkovics, Pat Mooney, and Hope Shand, **The Laws of Life: Another Development and the New Biotechnologies**, Development Dialogue Numbers 1-2 (Uppsala: Daghammarskjold Foundation, 1988), p. 32.

7. Ibid., p. 43.

8. "Hamsters could help health," **Times-Colonist**, Sunday October 14, 1990, p. A6.

9. **New York Times** front page, October 21, 1992.

10. **New York Times**, February 3, 1993, p. 1.

11. **New York Times**, February 3, 1993, p. C5.

12. Ibid, p. 1.

13. See Monroe Price, "Re-Examining Intellectual Property Concepts: A Glimpse Into the Future Through the Prism of Charkrabarty," **Cardozo Arts and Entertainment Law Journal**, 6:2 (1988), p. 443. Also see Scott Rayson, "The Patentability of Living Matter: Hey Waiter, What's Chakrabarty's *Pseudomonas* Bacterium Doing Back in the Supreme Court's Soup?" **Washington and Lee Law Review**, 37 (1980), p. 183.

14. Interestingly, potatoes and other asexually produced vegetables were originally excluded, although they were later included under the **Plant Variety Protection Act** passed in 1970.

15. See U.S. Supreme Court case: **Diamond v. Chakrabarty**, p 447 U.S. 303 (1980).

16. See Eli McKhool, "Lifeform Patentability Advisory Committee Presentation," **Canadian Intellectual Property Review**, Volume 2:1 (1985), p. 121; and Anthony Creber and Eli McKhool, "Recent Developments in Protecting Plants and Seeds Under the Canadian Patent Act," **Canadian Intellectual Property Review**, 3:1(1985), p. 28.

17. Fowler et al., **Laws of Life**, p. 252.

18. Pat Roy Mooney, **Seeds of the Earth: A Public or Private Resource?** (Ottawa: Canadian Council for International Co-operation, 1979), p. 103.

19. Martha Crouch, "Is Biotechnology Compatible with Sustainable Agriculture?" **AG Bioethics Forum**, Iowa State University, 4:1 (June 1992), p. 6. It is interesting to note that Dr. Crouch previously was involved in biotechnology research, and had her own lab where she trained students to work in the biotechnology industry. She has since become a prominent critic of agricultural biotechnology.

20. Mooney, **Seeds of the Earth**, p. 3.

21. Ibid., p. 7.

22. See chart and discussion in Mooney, **Seeds of the Earth**, pp. 5-6.

23. Mooney, "Genes, Seeds, Crops, and Patents and Politics," p. 1.

24. See Jack Kloppenburg Jr., "No Hunting!" **Cultural Survival**, 15:3 (Summer 1991), p. 14.

25. Darrell Posey, "Intellectual Property Rights and Just Compensation for Indigenous Knowledge," **Anthropology Today**, 6:4 (August 1990), p. 13; and Darrell Posey, "Effecting International Change," **Cultural Survival**, 15:3 (Summer 1991), p. 29.

26. Government of Ontario Green Paper, **Biotechnology in Ontario - Growing Safely**, (September 1989). See Jane Rissler and Margaret Mellon, "Public Access to Biotechnology Applications," **Natural Resources and Environment**, 4:3 (Winter 1990), p. 29, for discussion of the problems obtaining information to ensure public accountability.

27. Paul Emond, "Cooperation in Nature: A New Foundation for Environmental Law," **Osgoode Hall Law Journal**, 22 (1984), p. 332.

28. Jeremy Rifkin, for example, has been called this in discussions of the legal actions he has undertaken with the Foundation for Economic Trends to stop certain biotechnology experiments and to protest the granting of patents to genetically engineered organisms.

29. This distinction is sometimes characterized as the difference between shallow ecology, or shallow environmentalism, and deep ecology. See Arne Naess, "The Shallow and the Deep, Long-Range Ecology Movement: A Summary," **Inquiry**, 95 (1973), p. 16.

30. Neil Evernden, "The Environmentalists' Dilemma", in **The Paradox of Environmentalism**, Symposium Proceedings published by the Faculty of Environmental Studies, York University, 1984, p. 13.

31. Ibid. p. 13.

32. This phrase is used by John Rodman in "The Liberation of Nature?," **Inquiry** 20, (1977), p. 83.

33. See George Grant, **Technology and Empire: Perspectives on North America** (Toronto: House of Anansi, 1969) and Jacques Ellul, **The Technological Society** (Trans. John Wilkinson) (New York: Vintage Books, 1964) for discussions of technique.

34. This is the title of a recent book by Neil Evernden, published in 1992 by John Hopkins Press.

35. See Donna Haraway, **Simians, Cyborgs, and Women: The Reinvention of Nature** (New York: Routledge, 1991), on the naturalization of race, sex, and class.

Jane Horsley is a recent graduate of the joint Master in Environmental Studies and Bachelor of Law at York University. She is currently a Ph.D. student in the Department of Philosophy. She is looking at various issues in environmental ethics and environmental policy.

Heeding the Song Unseen

by Anne Bell

If one descends the Tatshenshini River in July, one is bound to come across the hermit thrush hopping about under the poplar, willow and scrubby spruce. A reclusive bird, its name seems to suit its unassuming appearance and the sparse, rugged surroundings in which I first heard it sing. Like a small brown robin deprived of its orange breast, it could easily pass unnoticed, and I myself would scarcely have paid it much attention had it not been for its song, a splash of delicate, resonant crystal and sparkling cascades.*

During the few weeks that I spent on the Tatshenshini, the song of the hermit thrush was my constant companion, as constant as the rush of the river itself. It cheered the grey dawns and filled the dusky nights. There can be no more beautiful reveille or serenade on this earth.

Like a meadow of dryas, a mouthful of gritty water or bear prints along the water's edge, the song of the hermit thrush is integral to experiencing the Tatshenshini. It is part of the meaning of the place. And yet, it is unlikely to figure in the ongoing discussions about the fate of the river. At most, it may be included in a bird count, an anonymous bit of data in a biodiversity argument.

Common and widespread, the hermit thrush falls through the cracks of the most powerful conservation rationale. It is neither rare, endangered nor unique to the area. It is not an "indicator species" of ecosystem health or integrity. It is not "game", nor is it of particular interest to the "non-consumptive" pursuits of birders. It lacks the mythical status of a raven, the acrobatics of an arctic tern, the stature of a trumpeter swan. Unlike these birds, the hermit thrush stands little chance of gaining consideration as a "tourism resource" for the region. It is simply one of countless inconspicuous creatures lying just outside of our narrow utilitarian field of view.

It is unfortunate that so much of what we value as humans depends upon our eyes and the categories that they impose on our experience and understanding. Let the hermit thrush remind us of what we fail to see. Let it sing for the voiceless, the inconsequential and all that has been left out of the stories that we tell about nature and its conservation.

**The Tatshenshini River which flows through British Columbia, Yukon and Alaska, is now the subject of a heated land use controversy. Plans to develop one of North America's largest copper mines near a tributary of the river have raised concerns about potential impacts on the area's wildlife and wilderness 'resources'.*


SPIRIT RISING
TZEPORAH

Spirit Rising

They tell me there's no connections...
But I hear them talk about the rape of the land
and I feel like I've been violated.

All around the world women are rising,
women are singing, and women are holding hands.

They tell me there's no connections...
But a 'virgin' forest says something to me

I saw a man stand in awe in the ancient temperate rainforest
"He's a big one".
I heard the roar of the chainsaw
and
I
heard
her
scream
"She's coming down fast."
When did that spruce become a woman?

I feel her anger and hear my own.

They tell me there's no connections...
But I hear them talk of manufacturing in Mexico
"No environmental laws, cheap labour and blow jobs are five bucks."

All around the world women's voices are calling,
women are screaming and women are fighting back.

I saw a powerful waterfall surrounded by ancient forest become a trickle of water at the side of the road.
I drank the water and tasted salt on my lips.

We see her crying.

They say there is no connections...
Yet I've heard of a woman raped because she fought for clean water
the river polluted by pulp from her forests
destined for "feminine protection"
money in their pockets.

All around the world women are nurturing, women are caring
and women are sharing their wisdom.

When they follow me home at night I feel fear and anger...
When I follow the truck on the logging road, follow the smoke rising up into the sky, follow the soil as it washes away
I feel the same fear and anger.

We hear her call.
Growing inside her is the spirit rising.

Tzeporah Berman

SELLING SEX, SELLING NATURE

by Sarah Kerr

Advertising is a barometer of popular culture. Advertisers depend on the fact that what we choose to buy reflects both how we see ourselves, and how we would *like* to see ourselves. The products that they offer us -- and the implied characteristics of those products -- are intended to appeal to our desire for whatever it is we feel is lacking in our lives: power, security, love or control. In this way, images of nature are often coded to represent our sexual, instinctual, animal sides, and connecting sex to nature in advertising has proven to be a very effective marketing technique.

The increasing use of animal patterned prints in the women's fashion industry and women's attraction to their promise of wildness reflect a discontent with socially imposed boundaries and behaviourial codes. Whereas human society is associated with reason, control, and order, nature is seen to offer a more passionate, spontaneous, and unfettered existence. Designers and advertisers would have us believe that wearing animal patterned prints will give us access to that (perceived to be) freer and less oppressive reality.

Just what does wearing leopard and snakeskin patterned clothing promise to do for women's independence, self-esteem and sex lives? The text of a photo article entitled "Law of the Jungle: Fashion's New Animal Magnetism Roars" in the April 1992 issue of **Elle** magazine points out how it is much more exciting to follow the "Law of the Jungle" than the law of society.

> Designers are showing a lot of skin lately, but it's not the kind you think. Animal patterned fabrics are stampeding out of the hills, making mincemeat of tamer trends and other oh-so-proper ensembles. Forget all that "kill or be killed" stuff: the only killing going on in the nineties fashion jungle is the "dressed to kill" kind. There are two ways to wear these fabulous fakes: stick to one print, head-to-toe (even accessories are doing the wild thing this season), or mix them with all-out abandon for an utterly undomesticated look, pair a faux rabbit jacket with savage leopard print leggings. Or give a snake print bustier, jacket, and pants a dose of jungle fever by layering them over a tiger-print body suit. Now that's what we call fierce.[1]

The text tells us that "animal patterned fabrics are stampeding out of the hills," the implication being that they come from nature, thus they are natural. It is important to remember, however, that these fabrics and clothes are *not* natural. It is not nature, but these many-times-removed images that represent nature to us, and thus are perceived to be natural, that are appealing.

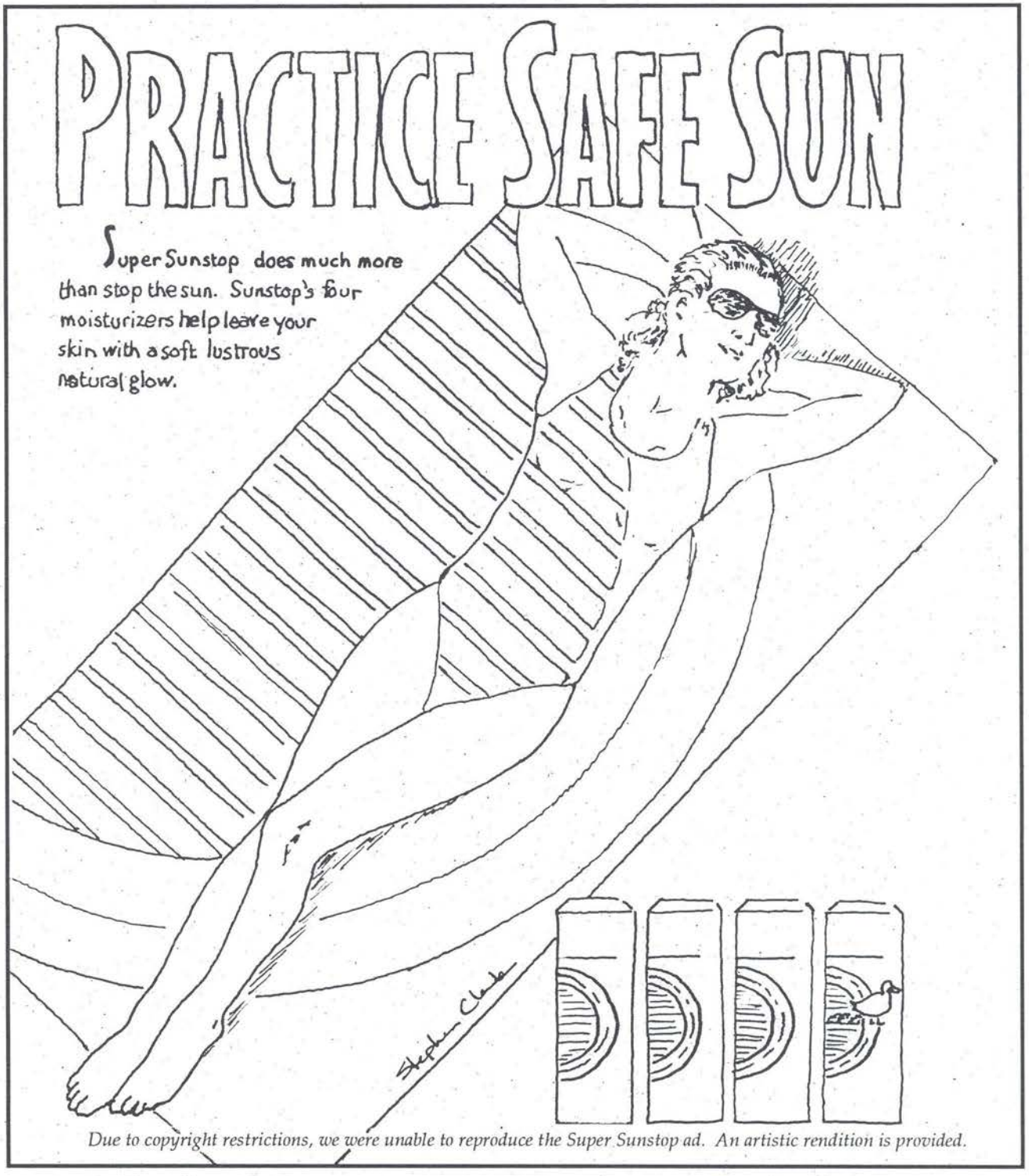
Taking this concept one step further, the text acknowledges that not only are the clothes not natural, they are, in fact, better that way: they are "fabulous fakes." Technology has taken possession of nature, improved upon it, and is now offering it back to us. Judith Williamson discusses this technique in light of Levi-Strauss' work on nature and culture.[2]

Levi-Strauss argues that the transformation from nature to culture, in many systems of thought, may be represented by the transformation of the raw into the cooked. Nature, in its 'raw' state, is 'cooked' by culture for our consumption. Williamson holds that advertising is the ultimate cooking of nature: the images of nature we see in ads are so far removed from reality,

that they have meaning only in their culturally imposed context.

Advertisements are often successful when they are predicated upon contradictions, and the Elle article manages to offer us both nature *and* culture. Human technology has cooked and thus 'denatured' the nature in the animal patterned prints, and so these clothes can now offer us a safe passage back into the wildness they are perceived to have come from.

A safe passage is what is needed, because the text tells us that the 'natural' phenomena of vicious competition exists even in the city: it's a "fashion jungle" out there, we read, somewhere that we must "forget the 'kill or be killed stuff'" and instead must worry about being "dressed to kill." Survival of the fittest determines the winners and losers both in the corporate board room and in the competition for a mate.



Due to copyright restrictions, we were unable to reproduce the Super Sunstop ad. An artistic rendition is provided.

These clothes are offered to women as a means of obtaining power and control, they are "savage prints" that "make mincemeat" out of "tamer trends" and other "oh-so-proper ensembles" (ie. those which abide by societally imposed guidelines.) The women who wear the clothes are demonstrating their "fiercely independent fashion concept."

It is telling, too, that the animals these women choose to dress up as -- lions, tigers, leopards, and snakes-- are not only coded as fierce and powerful, but their images are also heavily loaded with sexual connotations. Again, however, note the ability of advertising to appeal to us through contradictions: cats scratch, but they are also cute and cuddly. Either way, the "animal magnetism" of these outfits will not only draw men to the women who wear them, it will also keep them under control.

The message of the images and the accompanying text is clear: 'dress like a lion, the King of the Jungle, and not only will you gain power and respect in a society that does not respect women, but your sex life will improve too.' You will have more sex, and it will be better: wilder and more exciting. These clothes promise to be "utterly undomesticated," if you wear them, your sex life will no longer have to conform to societal rules, and you will be able to realize even your wildest fantasies just by "mixing them with all-out abandon" for a "dose of jungle fever."

The **Super Sunstop** ad on the previous page, building on our perceptions that nature is our link to our bodies, makes the connection between sex and nature in a more subtle but no less effective way than does the **Elle** article. The ad delivers both an explicit and an implicit message and it is the combination of the two that is designed to persuade us to buy **Super Sunstop** sunscreen.

To connect to the **Super Sunstop** ad on more than a literal level, the reader must bring an understanding of a particular social reality. In telling us to "Practice Safe Sun," the ad is attempting to trigger our minds to substitute in the phrase 'practice safe sex.' This will only be successful, however, in a context where 'practice safe sex' is a phrase whose implications are understood.

The ad is aimed at a culturally specific group which has a certain common area of knowledge: in this case the knowledge that the phrase 'practice safe sex' refers to the severity of the AIDS crisis and the fact that the spread of AIDS and other sexually transmitted diseases can be prevented by using condoms. 'Sex' is never actually mentioned in the ad, but it does not need to be, for the readers will insert the word themselves.

Throughout the ad, there is a parallelism of sex and nature (represented by the sun). The explicit message is that the sun, if we are not protected from it, can give us skin cancer. Implicit in the image and text, however, is also the notion that sex, if not practised with protection can give us sexually transmitted diseases. Because nature and sex are so closely linked in our minds, and using **Super Sunstop** will protect you from skin cancer and let you have a positive and healthy relationship with nature, the inference is that it will somehow also protect you from sexually transmitted diseases and let you have a positive and healthy relationship with your lover.

The **Super Sunstop**/condom connection is evident not only in the text, but in the image as well: if the woman were not lying on the towel, and another one with the same pattern was laid beside it, the resulting image would look just like a condom package. The similar prophylactic capabilities of sunscreen and condoms is stressed throughout the ad. The way the woman is lying on the towel presents an implicit offer of sex that is *protected* (because it is assumed that she is wearing **Super Sunstop**) and *natural* (because it would take place in the sun, on the beach.) Her swimsuit and pose make her appear to be part of the towel, implying that the model would offer no resistance to being used (by another person) for sex, in the same way that a towel would offer no resistance to being used by a wet body. Indeed, **Super Sunstop**'s moisturisers promise to leave you with a "soft, lustrous, natural glow" in the same way as can good sex (which the ad has already defined as protected.)

The ad implies that technology (ie. **Super Sunstop**) can improve on or cook nature. The 'scientific' endorsement of the product by the Canadian Dermatology Association emphasizes the importance of this technological human intervention in mediating the 'damaging' effect of 'long-term exposure' to nature. Super Sunstop is even waterproof: finally science has created a barrier protecting us from nature that even natural processes cannot remove.

Notes:

1. "Law of the Jungle: Fashion's New Animal Magnetism Roars," **Elle Magazine**, April 1992.

2. Williamson, Judith, **Decoding Advertising: Ideology and Meaning in Advertising** (New York & London: Marion Boyers Publishing, 1978).

Sarah Kerr is a graduate student in the Faculty of Environmental Studies at York University and an avid wilderness canoeist. She is exploring bioregionalism , ecofeminism and the links between them, and is looking for a recipe for ecologically sustainable, peaceful, egalitarian communities in a pre-feminist age.

BOOK REVIEWS

by
Mark Lutes

Evernden, Neil, **The Social Creation of Nature** (Baltimore: Johns Hopkins University Press, 1992)

The **Social Creation of Nature** challenges readers to examine their most basic assumptions about 'nature,' and one's place in the struggle to reconcile the human and non-human worlds. In bringing these assumptions to light, the book integrates an amazing variety of writers and perspectives. It contains some unpredictable twists and turns, and some readers may be put of by its extreme eclecticism and its refusal to acknowledge disciplinary traditions and intellectual boundaries. In this regard the bibliographical essay at the end of the book is very useful, and helps to situate many of the authors referred to in the book.

The book takes as its starting point the proposition that "It seems unlikely that we can hope to 'save nature' without first ascertaining just what it is we think we are attempting to save" (p. xii). From this deceptively simple point, the book embarks on a wide-ranging exploration spanning five centuries, and bringing together developments in Western art, literature, philosophy and science, in order to trace the genealogy of the modern conception of nature. In the process, it presents a compelling case for the power of language and conceptual frameworks to influence human relations with the world. The dominant understanding of nature, says Evernden, is at the root of our current 'environmental crisis,' and the only hope he holds out for resolving this crisis is by fundamentally rethinking our ideas of nature.

In fact, Evernden discusses not one 'nature,' but two. The distinction between them is crucial in the book, and to distinguish them he uses

> the convention of speaking of 'nature' when referring to the great amorphous mass of otherness that encloaks the planet, and to speak of 'Nature' when referring specifically to the system or model of nature which arose in the West several centuries ago (p. xi).

It is the second 'Nature' which is most familiar to the modern Western industrial society, and which has been widely criticized in the environmental thought literature for being resourcist, reductionistic, dualistic, mechanistic, and otherwise deficient. The bulk of this book is taken up in tracing the emergence of this concept of Nature over the past few centuries, followed in the final chapter by an exploration of a more satisfactory understanding of nature.

Evernden identifies three key stages in the process by which European views of the natural world changed over the last few centuries, corresponding roughly with the medieval period, the Italian Renaissance, and 17th century empiricism. In medieval society it was common to think of nature as having subjectivity and meaning--as being full of symbols which existed independently of human consciousness of them, the comprehension of which required an empathetic understanding. However, towards the end of the medieval period and the beginning of the Renaissance our modern idea of Nature begins to emerge. The meanings and subjectivity once seen in nature are "scoured" clean and appropriated to humans, leaving only the material world bound by mechanistic laws. Thereafter,

> (t)he empathized world of the medievals is dismissed as impermissible in the abstracted system called Nature. That system, relying as it does on the strict limitation of the permitted contents of Nature, requires a deliberate cleansing ... (and) the exclusion of all 'human' qualities (p. 55-6).

The propagation of this new view of Nature was no simple task, says Evernden, and was accomplished in part by the Renaissance art of Leonardo da Vinci and others, who showed landscapes and nature as composed of simply literal and ordered objects, often as a background for the meaningful human subjects, as in the Mona Lisa.

The Renaissance created the conditions for the next stage in the historical creation of modern Nature.

This was the empiricist tradition, with its almost exclusive attention to the surface appearances of things in the world. This restriction of nature to surface appearances corresponded to the humanist tradition of valuing 'human' qualities to the exclusion of all others, and the reification of the dualism between the human and the non-human.

> The increasingly strict division between human and nature provides a sense of secure separateness and assures that the only apparent path to knowledge of nature will be to gaze across the gulf at the visible surfaces of otherness. But perhaps the most apparent feature of the world has become the gulf itself, which constitutes a kind of moat that appears to protect while actually confining: we may be less besieged by otherness than imprisoned by self-worship (p. 87).

The view of Nature thus historically constructed in the West, as rule-bound materials with no meaning or value but that given it by humans, forms the basis of virtually all present day discourse about 'the environment.' And since all parties to the debate share the same underlying assumptions of Nature, it is not surprising that we seem doomed to keep repeating the same patterns of environmental destruction, with only new names for the chemicals and problems. Thus, says Evernden,

> ... if we would protect nature from the perils of the 'environmental crisis,' we must first acknowledge that those perils arose as a consequence of conceptual imprisonment. If we would save the world, we must set it free (p. 130).

Setting nature free would involve rethinking and perhaps eliminating the category of Nature, and developing a vocabulary for discussing the world that recognizes and appreciates 'wildness' with all its strangeness and mystery--as the 'wholly other' or the 'ultrahuman.' For, as Evernden concludes the book, paraphrasing Thoreau, "in wildness is, indeed, the preservation of the world" (p. 124).

Evernden presents a fundamental challenge to the worldview of modern industrial society, and also to that of environmentalism, which he says adopt fully the conceptual categories of humanism and of Nature as resource to be managed wisely:

> The wild other disappears the instant it is demystified and saved as a managed resource. ... and to 'save' in this context, means little more than to stack canned goods on a pantry shelf, neatly labelled 'preserved for future generations' (p. 131).

The book provides a useful cautionary tale about the hazards of uncritically using the dominant vocabulary and conceptual framework when attempting to challenge dominant institutions. There is a message here that environmentalists should take to heart.

However, my main criticism of the book is that it can potentially invalidate almost any political or activist project of challenging environmental destruction. As the book shows, it is exceedingly difficult to discuss what is being destroyed without relying to some extent on familiar vocabularies. To wait until a fully adequate vocabulary is developed and propagated widely enough to penetrate the dominant institutions, even assuming this would actually happen, would mean not addressing these issues for some time. But perhaps changing our view of nature is not only an intellectual or conceptual project, but a political one.

The book suggests that our 'environmental crises' are a consequence of our conceptual frameworks and vocabularies. While there is undoubtedly a correlation between our consciousness and actions in the world, there is not a simple cause and effect relationship. To identify our forms of consciousness as the root cause of environmental destruction ignores or relegates to a derivative status the historical, political and economic conditions under which particular forms of consciousness emerged. It obscures the question of how the dominant Western world-view emerged, whose interests it served, what political and economic forces supported and resisted it, what institutions embodied and perpetuated it, and how an understanding of these forces can lead to change.

In its account of the rise of the current view of Nature the book tends to gloss over or ignore the political, economic and social forces which are implicated in the changing views of nature. I strongly suspect a connection to the emergence of urban centres and trade in the middle ages, the shift of power and hegemony from the rural nobility and clergy to the urban middle classes, the decline of land as the basis of wealth, and the development of industrial production in Holland and England. I would also suspect that these changes were not independent of, or simply resulting from, changing views of nature, but that changes in both areas were mutually reinforcing, and embedded in political struggles raging at the time. If so, the changing conceptions of nature were at least as much the result of institutional changes as the cause. While the changing views of nature provided the convenient conceptual underpinnings for the human domi-

nation of the material world, they cannot be considered the cause.

If the conceptual imprisonment of nature so convincingly described in the book is the result of, or at least embedded in, the social transformations leading to the modern Western industrial society, then it is not clear that attempting to change our ideas of nature will yield the desired solution. If the dominant ideas in a society are strongly influenced by the social order (as a historical materialist approach would suggest) then it will be exceedingly difficult to change these ideas without simultaneously changing the social institutions that create and reproduce these ideas. This requires resistance, political struggle, organizing and activism. Whether this goes on under the banner of environmentalism or some other more appropriate label is not insignificant, but more important is that it happens. **The Social Creation of Nature** can provide valuable insights and direction for participants in this struggle.

McKibben, Bill, **The End of Nature** (Toronto: Anchor Books, 1990).

I first read **The End of Nature** about two years ago, and it probably influenced my choice of climate change as a research topic. I was convinced by the basic theme of the book; that global warming meant the loss of something that could not be accounted for in socio-economic terms, or even in measurable ecological terms. The idea that we are losing the 'natural' element in nature--that which is independent of human interference-- is a powerful one, and certainly resonated in my own experience, both growing up surrounded by forests in various stages of regeneration, and as an environmentalist arguing with the forestry companies that clearcutting does not exactly duplicate the effects of natural occurrences like fires and budworm infestations.

However, on first reading the book, and in subsequent re-readings, I was increasingly annoyed by the presentation of his argument. He worked his central point to death (so to speak), then further abused his metaphor by talking about the 'second end of nature.' This book is not so much a lament, as the dust jacket says, as a whine; a droning on and on about all the contradictions of living an affluent North American lifestyle, full of cliches but lacking in any real insight into the causes or the problem he describes. Because he eschews any real analysis of the forces behind the problem, all we are left with at the end is frustration. I don't think every book about environmental problems has to have an upbeat ending, with ten easy steps to redemption, but it should advance the discussion in some direction. Other than naming the problem in a distinctive way (a very worthwhile goal in itself), McKibben contributes nothing, and he could have accomplished his goal in a much shorter article, without all the repetitious hand-wringing.

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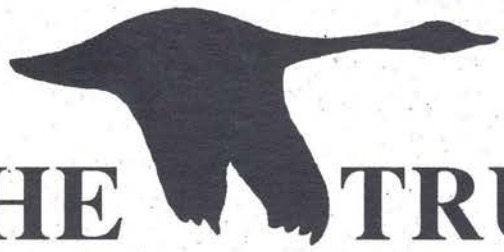

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